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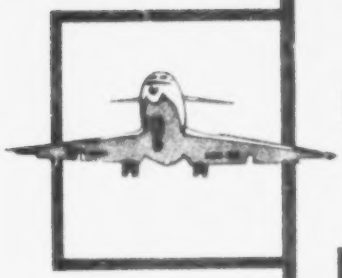

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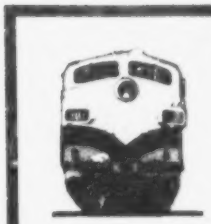

ANNUAL REVIEW OF AIRCRAFT ACCIDENT DATA

U.S. GENERAL AVIATION CALENDAR YEAR 1979

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UNITED STATES GOVERNMENT

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16. Abstract

This publication presents a detailed summary of aircraft accidents which occurred in U.S. general aviation operations during the calendar year 1979. It includes an analysis of accident data involving an overview, types of accidents, accident causal factors, kind of flying, and conclusions; a statistical compilation of accident information presented in the form of accident and rate tables, analytic tables, injury tables and cause/factor tables. These statistical data are divided into sections pertaining to all operations, small fixed-wing aircraft, large fixed-wing aircraft, rotorcraft, gliders, and collisions between aircraft.

In 1979, there were 4,023 total general aviation accidents, 678 of which were fatal. Included in the total number of accidents are 40 collisions between aircraft. In coding each aircraft involved in collisions, an additional 40 records resulted, which brought the total number of accident records to 4,063. This figure reflects the actual number of pilots and aircraft involved in the accidents.

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Foreword

The Statistical Review of U.S. General Aviation Accidents, published annually by the National Transportation Safety Board, contains statistics compiled from reports of 4,023 aviation accidents that occurred during calendar year 1979. General aviation comprised one category of U.S. civil aviation and includes air taxi/commuter operations. The accident records of the other statistical category - air carriers - are contained in the Safety Board publication, "Annual Review of Aircraft Accident Data, U.S. Air Carriers."

Forty collisions are included in these accidents which brings the total number of records to 4,063. This figure reflects the actual number of pilots and aircraft involved in the 4,023 accidents. There was one collision involving an air carrier and general aviation aircraft, and one collision involving a U.S. military and general aviation aircraft in 1979. The tabulations of statistical information exclude the air carrier and military aircraft records, except where noted.

There were no U.S. general aviation accidents involving suicide as a causal factor during 1979.

The aircraft activity and exposure information used in this publication has historically been provided by the Federal Aviation Administration (FAA). These data include hours flown for all operations, for various types of aircraft and for specific primary uses of these aircraft. Prior to 1977, the FAA obtained this information on the same form used annually by all aircraft owners to revalidate their aircraft registration.

Beginning in 1977, the FAA began a new program for collecting exposure information on general aviation operations. The new statistical sampling procedure involves a survey questionnaire mailed to a random sample of the general aviation aircraft owners. The survey solicits information relating to hours flown, aircraft location, and other pertinent data.

In 1979, the NTSB discontinued the inclusion of accidents involving U.S. registered aircraft on foreign soil in its counts of U.S. general aviation accidents. From 1976 through 1978 this category of accidents averaged 33 per year. NTSB will continue to collect data on U.S. Air Carrier accidents which occur on foreign territory while operating under Part 121 of U.S. Federal Air Regulations. Since a small number of accidents are involved in this change, the effect on yearly comparisons of accident frequencies and rates is negligible.

The Safety Board has published numerous special studies, safety information bulletins, and accident reports on many of the hazards to aviation covered in this review. Single copies of all of these publications are available to the public on request. Safety information bulletins are released concurrently with each issue of the Board's publication, "Aircraft Accident Reports, Brief Format, U.S. Civil Aviation." Each issue of this publication contains a computer printed synopsis of the pertinent facts and probable cause(s) of 300 aviation accidents. The 1979 accidents were published in 14 issues. Each Safety Information Bulletin highlights a hazardous condition and includes the Safety Board's suggested preventive action.

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ANALYSIS OF STATISTICAL INFORMATION

XI

Analysis of Statistical Information
Overview

There were 4,023 accidents in U.S. general aviation operations during 1979. This accident total excludes all U.S. registered aircraft accidents on foreign soil. The accident statistics for previous years include accidents involving U.S. aircraft on foreign soil; therefore, care must be exercised when yearly comparative accident numbers are required. The five year average analysis included in the analysis section excludes U.S. registered aircraft accidents on foreign soil thereby providing a true comparison with 1979 accidents.

As a result of collisions between aircraft there were 4,063 aircraft involved in these accidents, of which 4,061 were general aviation. One U.S. air carrier and one U.S. military aircraft were also involved in collision with general aviation aircraft.

Of the 4,063 aircraft involved in U.S. general aviation accidents in 1979, 1,055 (25.97 percent) were destroyed and 2,956 (72.75 percent) were substantially damaged. Six hundred and seventy-eight of the 4,023 accidents resulted in fatal injuries. There were serious injuries in 395 accidents and minor injuries occurred in 603 accidents.

There were 7,983 persons aboard the 4,063 aircraft involved in general aviation accidents in 1979; 1,353 persons were fatally injured (16.95 percent of those aboard the aircraft involved). Six hundred and eighty-nine persons (8.63 percent) were seriously injured, 1,054 (13.20 percent) were injured slightly and 4,887 (61.21 percent) were not injured. An average of 1.97 persons were aboard each general aviation aircraft involved in an accident in 1979.

Since 1970, general aviation accident rates per 100,000 aircraft hours flown, have shown a 48.73 percent decrease from 18.10 in 1970 to 9.28 in 1979. During this same period the number of hours flown has increased from 26.0 million to 43.3 million, a 66.54 percent increase. At the same time, the total number of accidents has decreased from 4,712 in 1970 to 4,023 in 1979, a 14.62 percent decrease. Fatal accident rates have shown a similar downward trend, starting with 2.46 in 1970, then gradually trending down to 1.56 in 1979. Minor upward increase deviations were recorded in 1971, 1972 and 1978 during this overall downward trend.

The number of fatalities recorded in 1979 decreased dramatically from the all time high of 1,770 fatalities in 1978 to 1,367, a 22.77 percent decrease. There were no catastrophic accidents similar to the midair collision between a Pacific Southwest Airlines Boeing 727 and Gibb Flying Services Cessna 172 over San Diego, CA, on September 25, 1978, in which 144 died, including 7 on the ground, to balloon the total number of general aviation fatalities. In fact, the highest number of fatalities in a general aviation accident (17) occurred in a commuter airline accident involving a Downeast Airlines Dehavilland DHC-6 aircraft at Rockland, ME, on May 30, 1979.

The number of total and fatal 1979 accidents decreased significantly from the 1978 levels. This coupled with a slightly lower occupant load factor per accident lowered the number of fatalities for the year to greatly improve the comparison with 1977 and 1978. Since 1970 there were 5 years in which the number of fatalities were higher than the 1,367 recorded during 1979; and, there were 4 years in which the number of fatalities were slightly lower.

Table 1. -- Overview
U.S. General Aviation
1978 through 1979

	1978	1979	Percentage Change
Aircraft-hours flown 1/	39,409,269	43,340,081	+ 9.97
Eligible aircraft 1/	198,778	210,339	+ 5.82
Total accidents	4,494	4,023	-10.48
Aircraft involved 2/	4,557	4,063	-10.84
Aircraft damage 2/			
Destroyed	1,227	1,055	-14.02
Substantial	3,284	2,956	- 9.99
Minor	29	29	None
None	17	23	+35.29
Unknown/Not Reported	0	0	None
Injury index			
Fatal	793	678	-14.50
Serious	458	395	-13.76
Minor	662	603	- 8.91
None	2,581	2,347	- 9.07
Unknown/Not Reported	0	0	None
Injuries 3/			
Fatal	1,770	1,367	-22.77
Serious	858	700	-18.41
Minor	1,317	1,077	-18.22
None	5,599	4,901	-12.47
Unknown/not reported	0	0	None
Total aboard	9,288	7,983	-14.05
Occupant Load Factor	2.04	1.97	- 3.43
Fire after impact 2/			
Fatal accidents	198	183	- 7.58
Nonfatal accidents	143	145	+ 1.40

1/ Source: Federal Aviation Administration
2/ Includes all aircraft involved in collisions.
3/ Includes persons aboard any aircraft involved in a collision with general aviation aircraft and persons injured on the ground.

Figure 1.--ACCIDENTS, FATALITIES U.S. GENERAL AVIATION 1970-1979

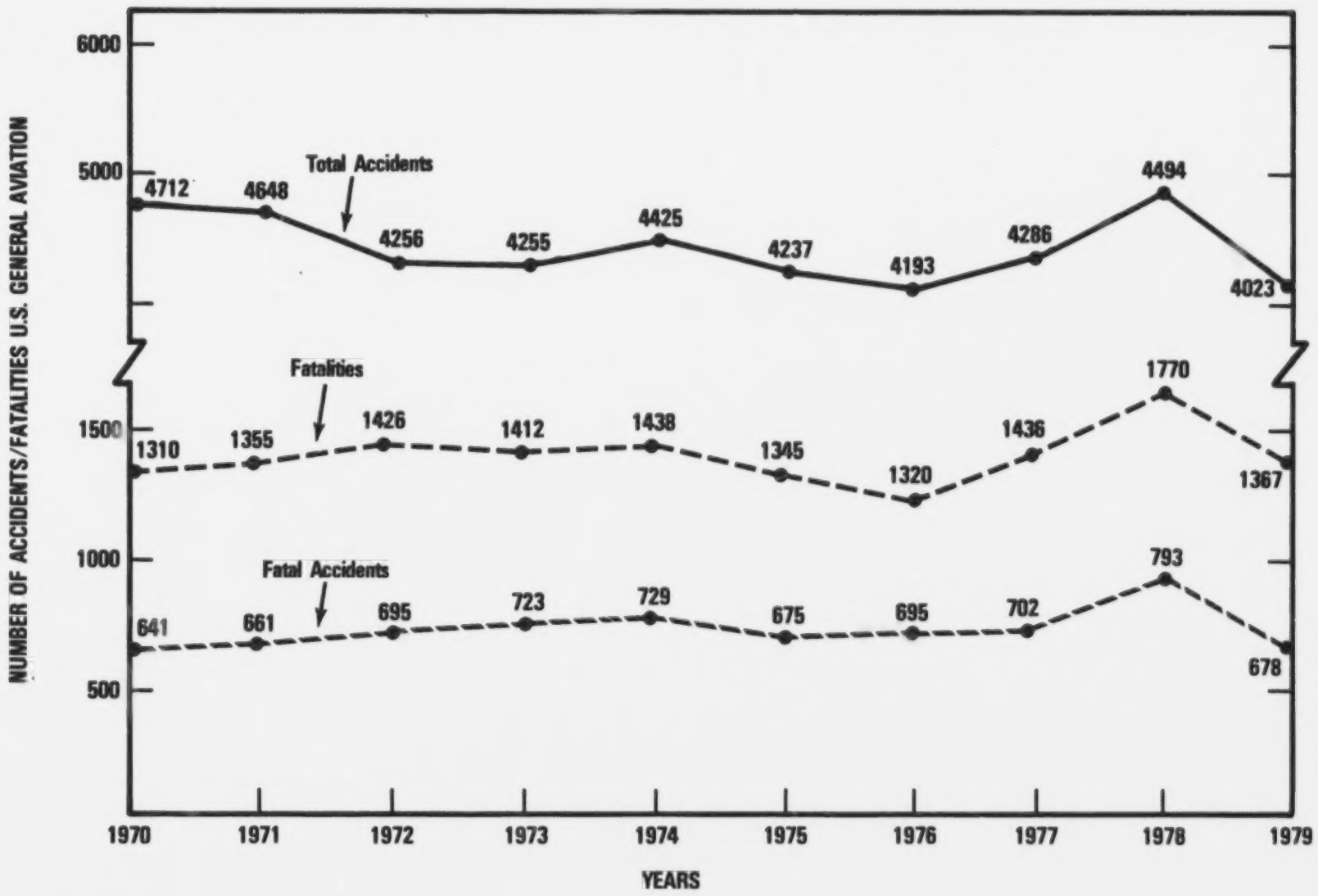

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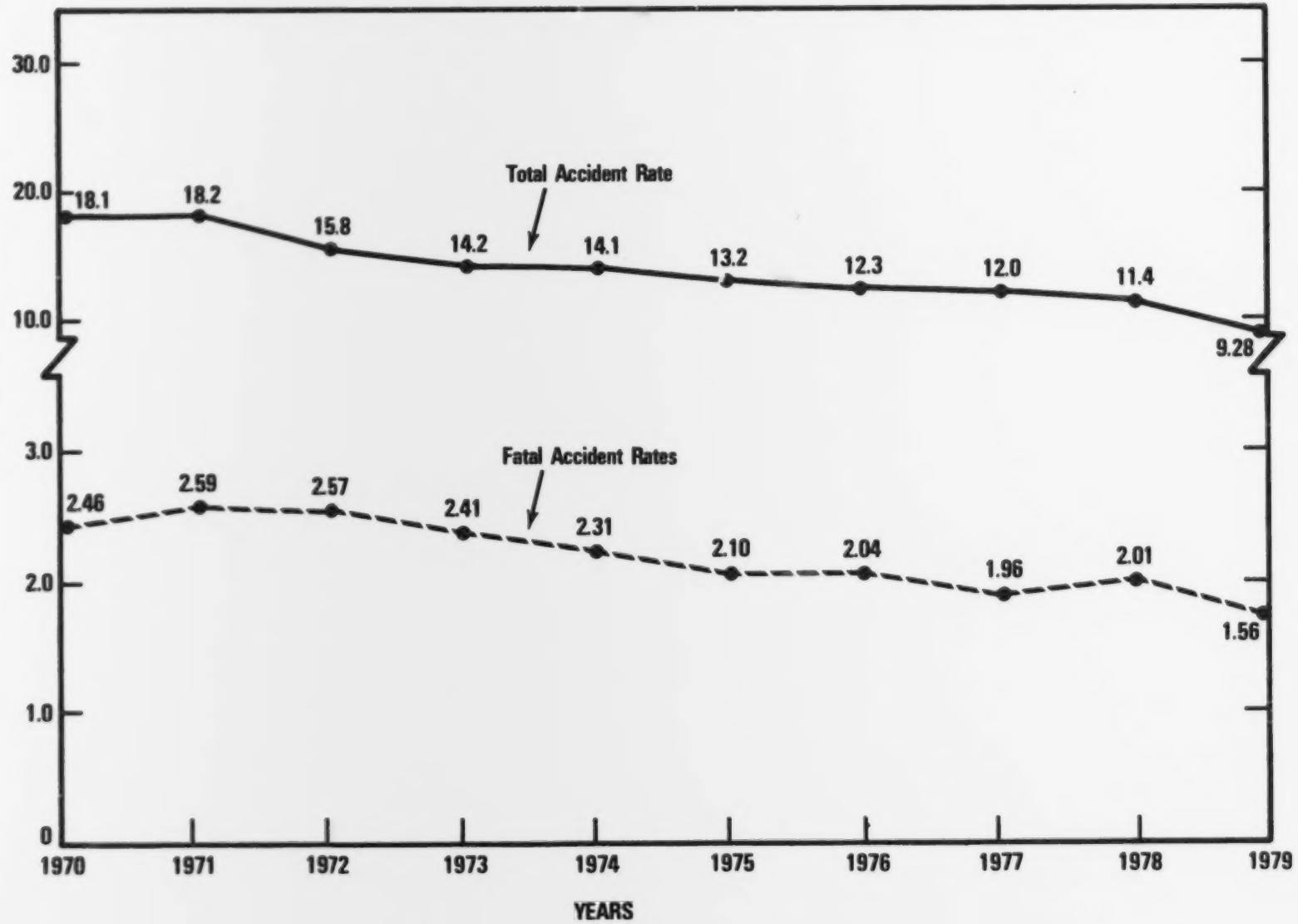
Figure 2--ACCIDENT RATES PER 100,000 AIRCRAFT—HOURS FLOWN U.S. GENERAL AVIATION
1970—1979



Types of Accidents

Engine failure or malfunction is cited as the first accident type 1/ in 24 percent of general aviation accidents occurring in 1979. Because of the nature of this accident classification, it is usually followed by a second type of accident 1/ where the actual damage or injury occurred. The primary second types of accidents associated with the 987 engine failure/malfunction accidents in order of frequency are: nose over/down (167); collision with trees (139); collision with ground/water-uncontrolled (108); hard landing (86); and gear collapsed (76). Although engine failure/malfunction accidents account for 24 percent of total general aviation accidents, this accident type accounts for only 80 or 11.56 percent of the 678 fatal general aviation accidents.

Groundloop, was cited as a first type of accident 427 times (10.51 percent) and 361 times in conjunction with a second type of accident. The principal second types in order of frequency of occurrence are: nose over/down (90); gear collapsed (85); collision with snowbank (61); collision with ditches (25); and collision with trees (18). Groundloop accidents accounted for 2 fatal accidents in 1979 and were cited in only 5 accidents where serious injuries but no deaths occurred.

Hard landing is the third highest first accident type with 253 accidents (6.23 percent) in 1979. The most common second accident types following hard landing are: gear collapsed (96); and nose over/down (25).

Collision with ground/water-controlled was cited as a first accident type 244 times and collision with trees 203 times. The number of second type of accident citations following these accidents are insignificant.

The five leading first accident types - engine failure/malfunction, ground/water loop-swerve, hard landing, collision with ground/water-controlled and collision with trees - account for 52.05 percent of all accident type citations, and 41.75 percent (282) of the fatal accidents. However, the five leading fatal accident types - collision with ground/water-controlled, collision with ground/water-uncontrolled, engine failure/malfunction, collision with trees and stall/spin - account for 64.30 percent of the fatal accidents but less than half (41.86 percent) of the total accidents.

Three first type accidents continue to appear in the top five first accident types for both total and fatal accidents; engine failure/malfunction, collision with ground/water-controlled and collision with trees. The highest percentage of fatal accidents for a single first accident type is 17.63 percent for controlled collision with ground/water, involving 122 of 678 fatal accidents. Uncontrolled collision with ground/water followed closely accounting for 16.18 percent of fatal accidents with 112 citations and engine failure malfunction accounted for 80 citations or 11.56 percent.

1/ See explanatory notes for description of first and second accident type.

Types of Accidents
Table 2 -- Ten Most Frequent Types of Accidents
1979

Type of Accident	Frequency	Percent of total accident records
Engine failure or malfunction	987	24.30
Ground water loop-swerve	427	10.51
Hard landing	253	6.23
Collision with ground/water controlled	244	6.01
Collided with trees	203	5.00
Overshoot	158	3.89
Stall/mush	154	3.79
Collided with wires/poles	149	3.67
Nose over/down	137	3.37
Collision with ground/water uncontrolled	130	3.20

Types of Fatal Accidents
Table 3 -- Ten Most Frequent Types of Fatal Accidents
1979

Type of Accident	Frequency	Percent of fatal accident records
Collision with ground/water controlled	122	17.63
Collision with ground/water uncontrolled	112	16.18
Engine failure/malfunction	80	11.56
Collision with trees	77	11.13
Stall/Spin	54	7.80
Stall	48	6.94
Airframe failure in flight	40	5.78
Collided with wires/poles	30	4.34
Midair collisions	27*	3.90
Missing aircraft (not recovered)	20	2.89

* Includes both aircraft records

Figure 3.--TEN MOST PREVALENT ACCIDENT TYPES U.S. GENERAL AVIATION 1979 Vs. 5-YEAR AVERAGE

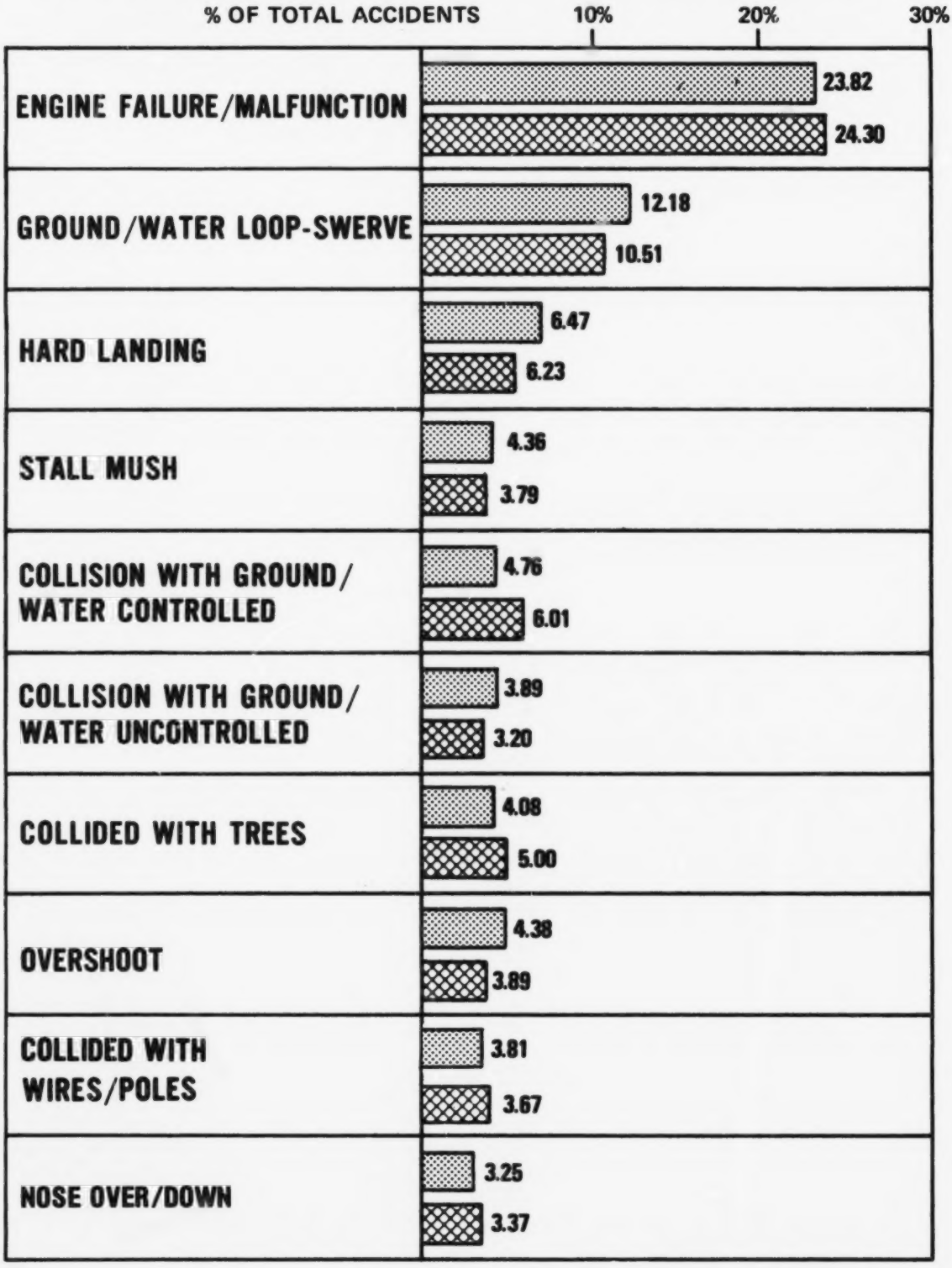


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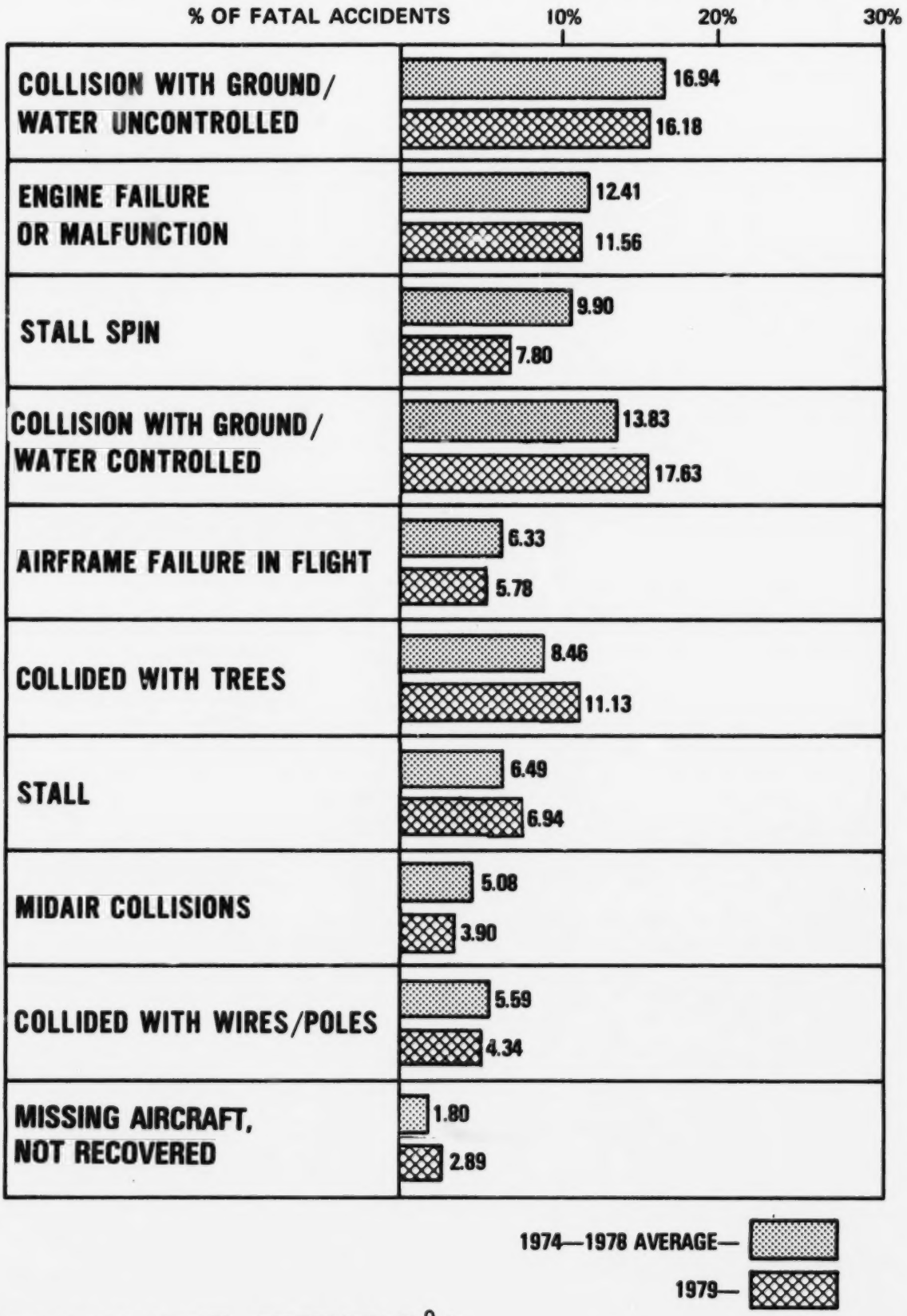
Figure 4.--TEN MOST PREVALENT FATAL ACCIDENT TYPES U.S. GENERAL AVIATION 1979 Vs. 5-YEAR AVERAGE



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Phases of Operations

The landing phase of operation continues to dominate the numbers of total accidents recorded by phase of operation, while the majority of fatal accidents continue to happen during the inflight phase of operation. There were 1,643 total accidents (40.46%) that occurred during the landing phase, a decline from 1,880 accidents (41.28%) during this same phase in 1978. Inflight phase of operation had the second highest number of total accidents 1,402 (35.52%) also representing a decline over 1,528 accidents in 1978, but showing a slight increase in percentage over 1978 (33.55%). Engine failure/malfunction led all other accidents in this phase of operation. Accidents occurring during takeoff numbered 807, or 19.87 percent, a decrease from 1978 figures of 889, or 19.52 percent of total.

With reference to fatal accidents by phase, the inflight phase has the highest number with 430 accidents 62.14% of all fatal accidents. Fatal landing and takeoff accidents numbered 138 (19.94%) and 88 (12.72%), respectively. Six fatal accidents were recorded in the static phase of operation and one fatal accident was recorded in the taxi phase of operation.

Phases of Operation

Table 4 -- Total Accident by Phase of Operation

Phase of Operation	Accident Records	Percent of Total Records
Landing	1643	40.46
Inflight	1402	35.52
Takeoff	807	19.87
Taxi	131	3.23
Static	37	0.91
Unknown/Not Reported	41	1.01

Table 5 -- Fatal Accidents by Phase of Operation

Phase of Operation	Accident Records	Percent of Fatal Records
Inflight	430	62.14
Landing	138	19.94
Takeoff	88	12.72
Static	6	0.87
Taxi	1	0.14
Unknown/Not Reported	29	4.19

Figure 5.--PERCENTAGE OF TOTAL ACCIDENTS PER PHASE OF OPERATION
U.S. GENERAL AVIATION
5-YEAR AVERAGE Vs. 1979

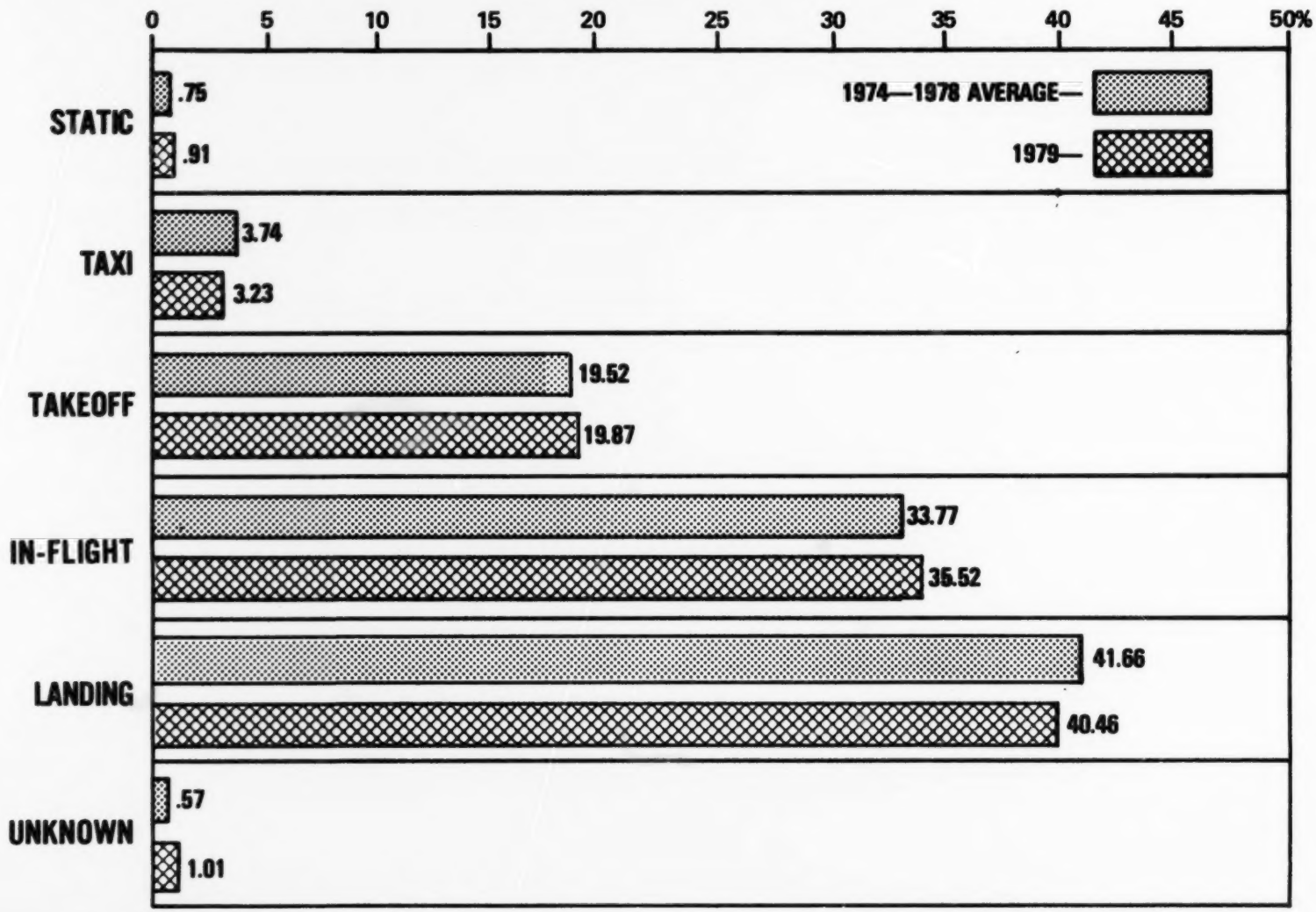

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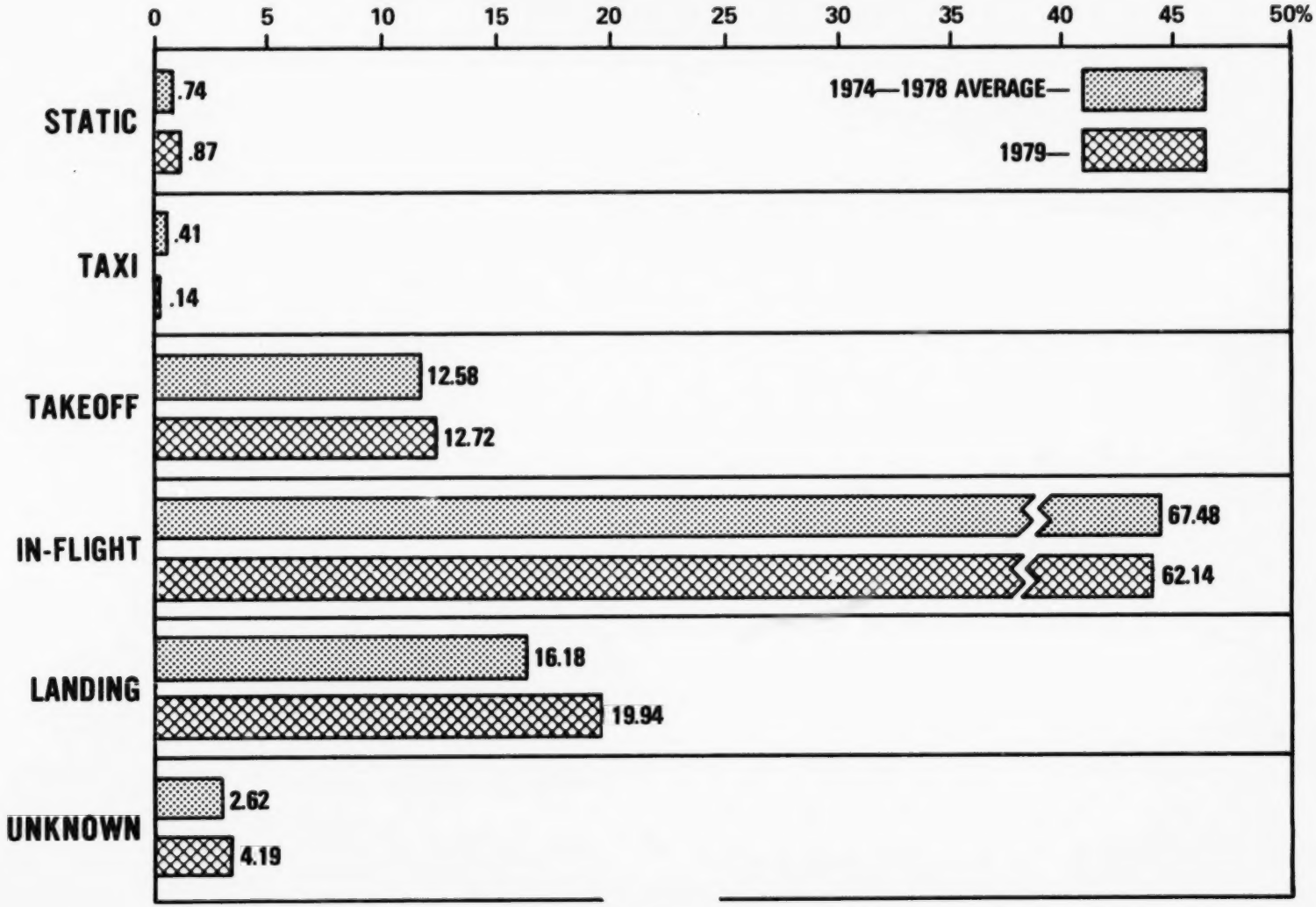
Figure 6.--PERCENTAGE OF FATAL ACCIDENTS PER PHASE OF OPERATION U.S. GENERAL AVIATION 5-YEAR AVERAGE Vs. 1979



Accident Causes/Factors

All of the 4,023 accidents occurring in 1979 were assigned cause/factors. In past years somewhat less than 100 percent causal assignment was possible due to delay in receipt of accident records involving U.S. registered aircraft on foreign soil (see Foreword). The 10 most frequently cited causes or related factors of fatal and nonfatal accidents are listed by percentage and frequency of occurrence in Tables 6 and 7, respectively.

In accidents where fatalities occurred, 6 out of the 10 leading causal citations involved some type of human failure/error while 4 involved environmental conditions. No mechanical difficulty or aircraft malfunctions were included in the top 10. In accidents where no fatalities occurred 5 out of the 10 leading causal citations involved some type of human failure/error while 3 involved material/overload/or powerplant failure for undetermined reasons and 2 involved environmental conditions.

The specific causal citation "Pilot - Inadequate Preflight Preparation or Planning" is the leading cause/factor in nonfatal accidents. This cause/factor was cited in 399 or 11.93 percent of all nonfatal accidents in 1979 compared to 420 citations or 11.47 percent in 1978.

In fatal accidents, the specific causal citation "Weather - Low Ceiling" is the leading cause/factor for 1979. This weather causal factor was involved in 170 fatal accidents which resulted in 380 fatalities or 35.97 percent of the fatalities during 1979.

Pilot cause/factors continue to predominate the fatal accidents (572 of the 678 fatal accidents, 84.37%) while weather related cause/factor citations remain second (276 of the fatal accidents, 40.71 percent).

Table 6-- Ten Most Frequently Cited
Cause/Factor of 3,345 Nonfatal Accidents

Cause/Factors	Frequency	Percent
Pilot - Inadequate Preflight Preparation or Planning	399	11.93
Miscellaneous Acts, Conditions Overload Failure	334	9.99
Terrain - High Obstructions	293	8.76
Weather - Unfavorable Wind Conditions	263	7.86
Pilot - Mismanagement of Fuel	245	7.32
Pilot - Failed to Obtain/Maintain Flying Speed	240	7.17
Pilot - Selected Unsuitable Terrain	224	6.70
Powerplant - Failure for Undetermined Reasons	208	6.22
Miscellaneous Acts, Conditions Fuel Exhaustion	208	6.22
Miscellaneous Acts, Conditions Material Failure	203	6.07

Table 7 -- Ten Most Frequently Cited
Cause/Factors of 678 Fatal Accidents

Cause/Factors	Frequency	Percent
Weather - Low Ceiling	170	25.07
Pilot - Continued VFR Flight Into Adverse Weather Conditions	131	19.32
Pilot - Failed to Obtain/Maintain Flying Speed	131	19.32
Weather - Fog	122	17.99
Pilot - Inadequate Preflight Preparation or Planning	90	13.27
Pilot - Spatial Disorientation	86	12.68
Terrain - High Obstructions	77	11.37
Miscellaneous Acts, Conditions Unwarranted Low Flying	58	8.55
Weather - Rain	49	7.23
Pilot - Improper Inflight Decisions or Planning	44	6.49

Figure 7.--TOTAL ACCIDENTS
CAUSE OR RELATED FACTORS PERCENTAGE DISTRIBUTION
U.S. GENERAL AVIATION
5-YEAR AVERAGE Vs. 1979

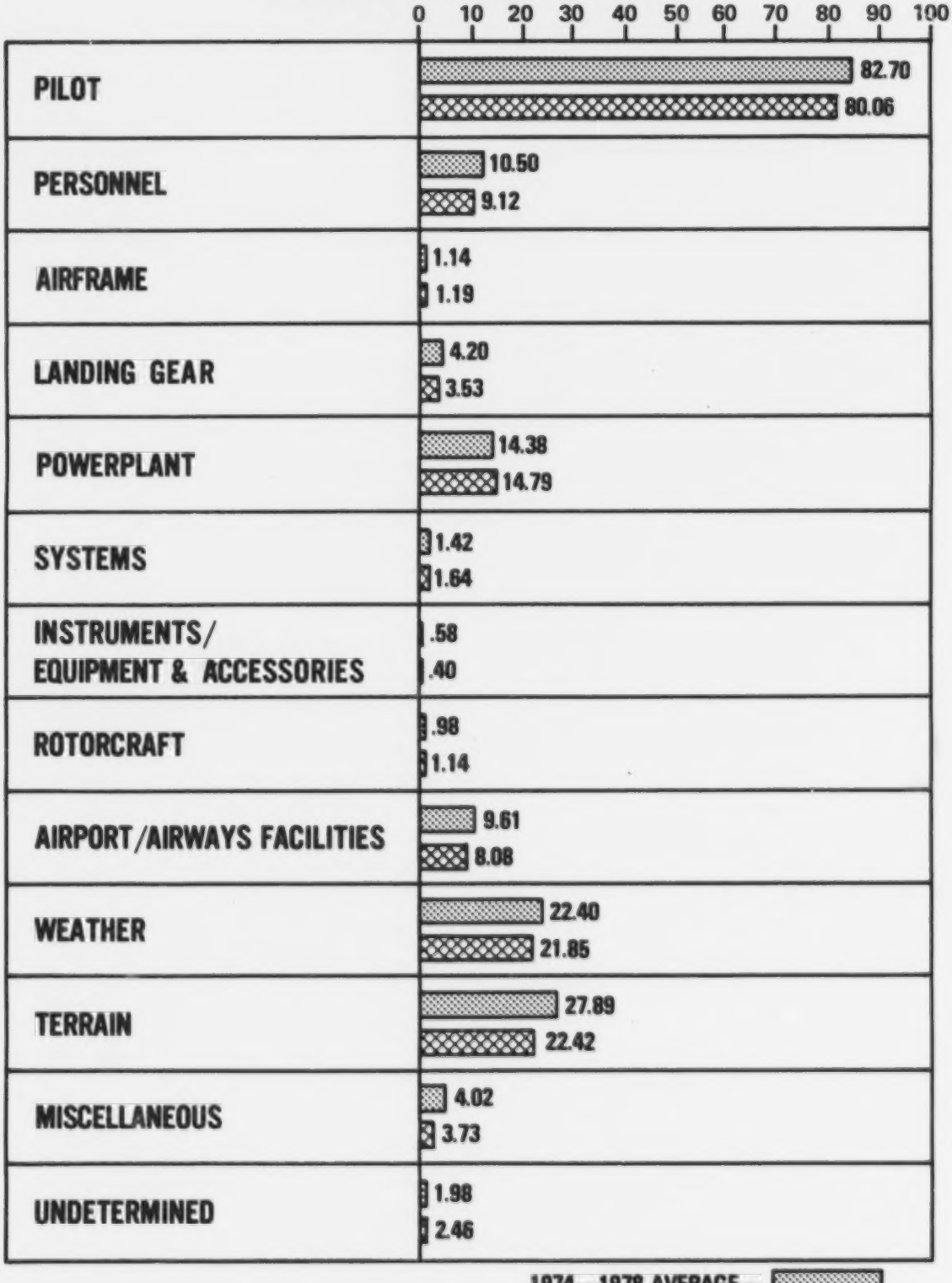


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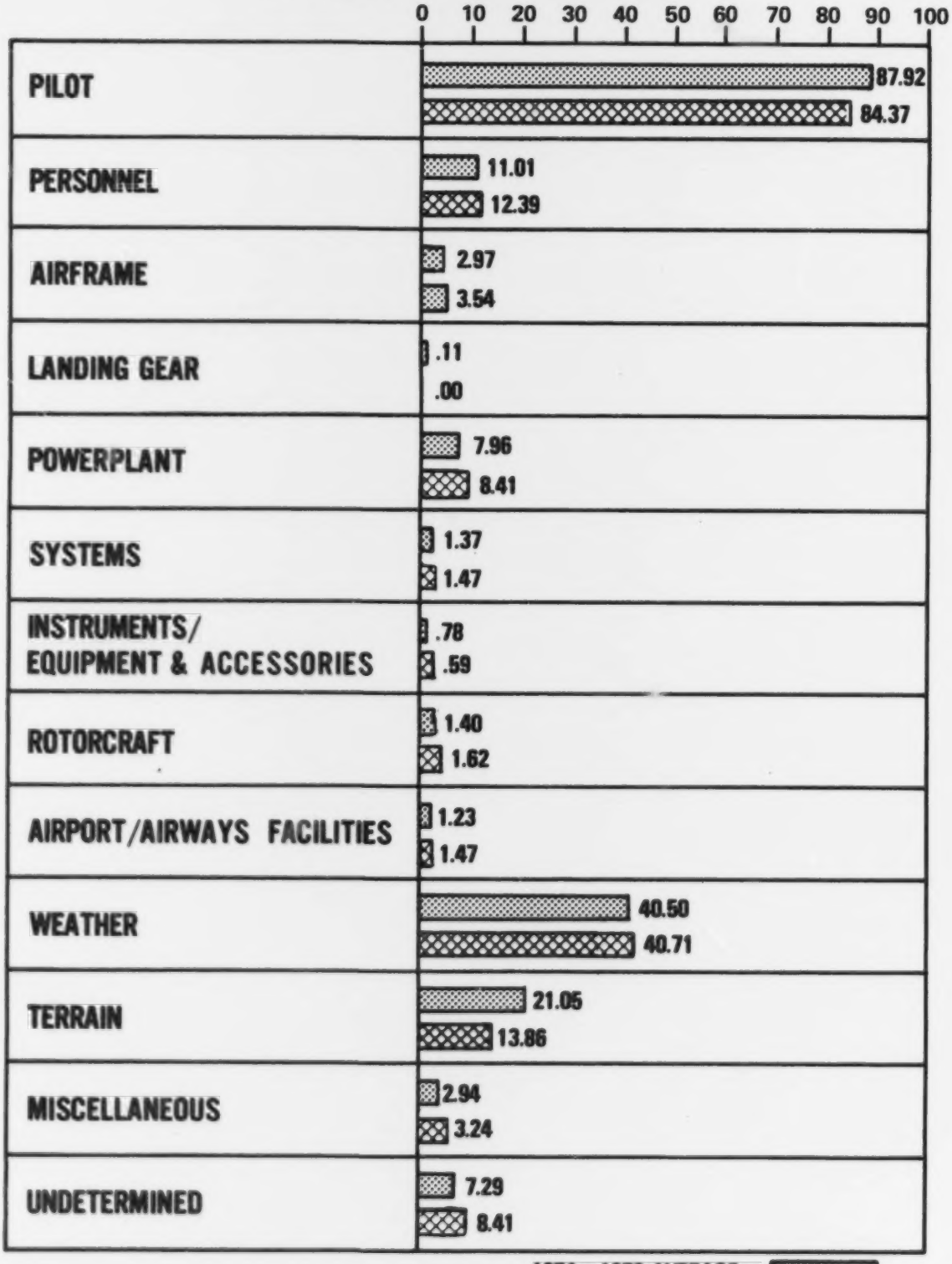
Figure 8.--FATAL ACCIDENTS
CAUSE OR RELATED FACTORS PERCENTAGE DISTRIBUTION
U.S. GENERAL AVIATION
5-YEAR AVERAGE Vs. 1979



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Kinds of Flying

The kinds of flying considered in this analysis - pleasure, aerial application, instructional, air taxi, business, and corporate/executive - show across the board improvement in total and fatal accident rates per 100,000 aircraft hours flown when compared to 1978. Pleasure flying continues to experience the highest total and fatal accident rates with 17.40 total and 3.34 fatal. Corporate/executive flying in contrast continues to experience the lowest rates with 1.68 total and 0.30 fatal.

Aerial application had the second highest total accident rate (12.27), followed by instructional (7.85), air taxi (4.88) and business (2.80). In fatal accidents air taxi was in second place (1.07) followed by aerial application (0.84), instructional (0.63) and business (0.61). The average total accident rate for all kinds of flying was 9.28 during 1979, compared to 11.40 in 1978. Average fatal rate in 1979 was 1.56 and 2.01 in 1978.

Table 8 -- Kind of Flying
Total Accident Rates per
100,000 Aircraft Hours Flown

	1976	1977	1978	1979
Pleasure	20.37	18.45	19.13	17.40
Aerial Application	17.29	16.97	16.44	12.27
Instructional	9.59	9.42	9.58	7.85
Air Taxi	4.76	5.16	6.06	4.88
Business	4.06	3.89	3.49	2.80
Corporate/Executive	1.43	1.51	1.78	1.68

Table 9 -- Kind of Flying
Fatal Accident Rates per
100,000 Aircraft Hours Flown

	1976	1977	1978	1979
Pleasure	3.88	3.64	3.81	3.34
Aerial Application	1.56	1.09	1.01	0.84
Air Taxi	1.17	1.05	1.56	1.07
Instructional	1.01	0.79	0.97	0.63
Business	0.85	0.69	0.77	0.61
Corporate/Executive	0.33	0.42	0.45	0.30

Figure 9.--KIND OF FLYING—TOTAL ACCIDENT RATES PER 100,000 AIRCRAFT—HOURS FLOWN 1976—1979

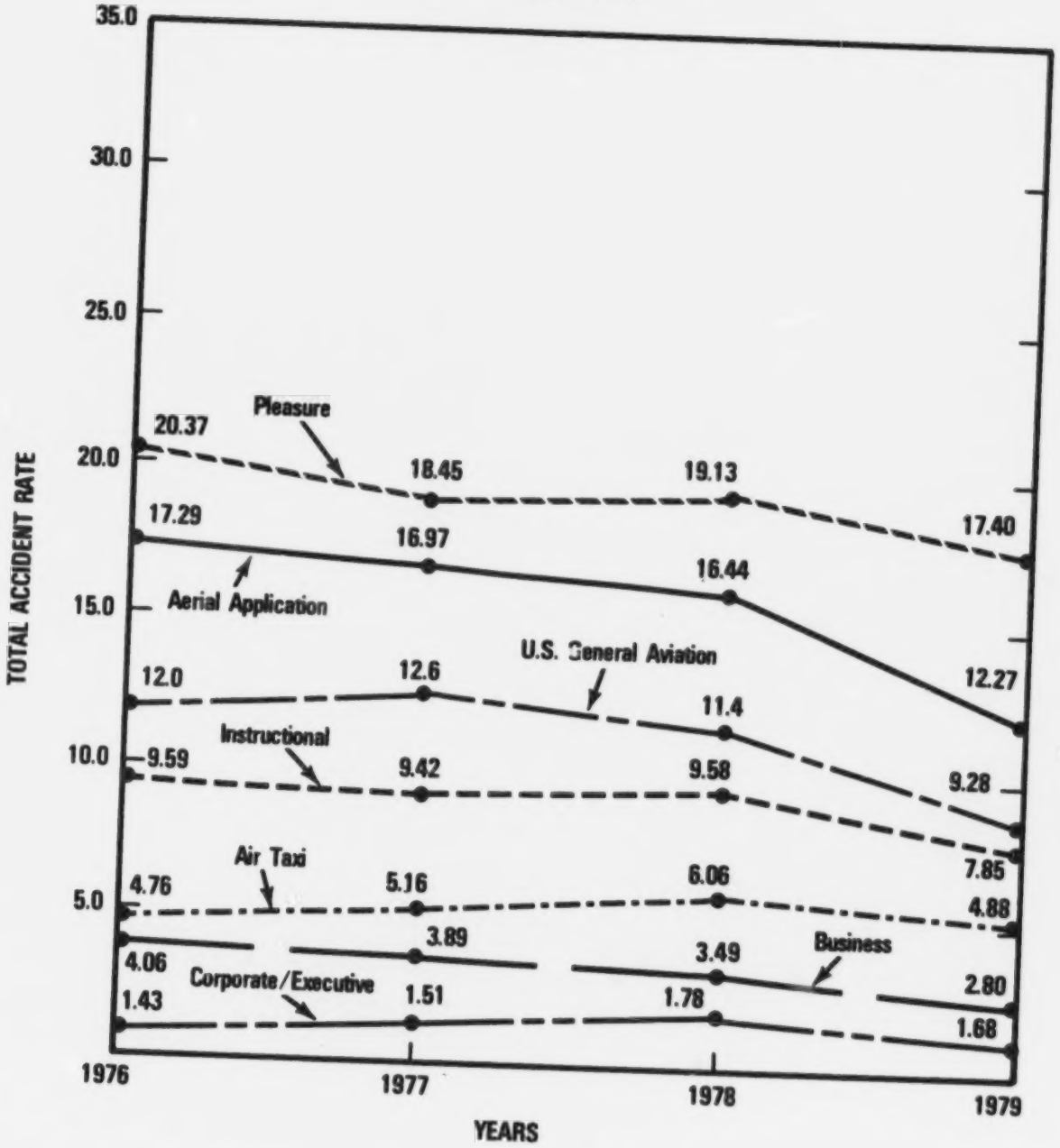

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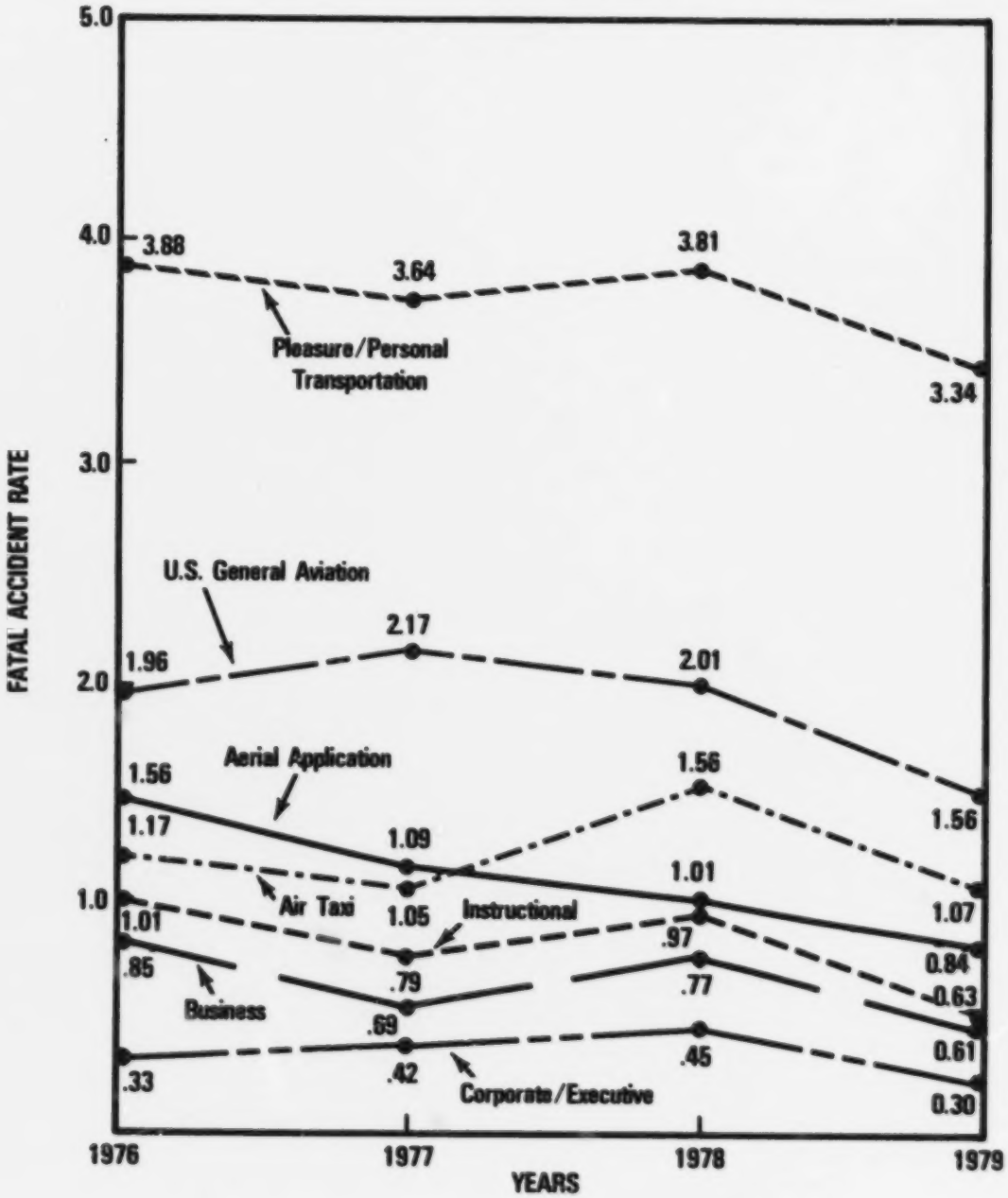
Figure 10.--KIND OF FLYING—FATAL ACCIDENT RATE PER 100,000 AIRCRAFT-HOURS FLOWN 1976—1979



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Conclusions

1. The 1979 general aviation accident record showed across-the-board decreases in numbers of accidents and accident rates when compared with 1978. The decline in accident rates continued a decreasing trend over the past 10 years.

   * Total accidents decreased from 4,494 during 1978 to 4,023 during 1979.

   * Fatal accidents decreased from 793 during 1978 to 678 in 1979.

   * The number of people killed in general aviation accidents decreased substantially from 1,770 in 1978 to 1,367 in 1979 falling below a 10 year average of 1,418.

   * The total accident rate per 100,000 aircraft hours decreased from 11.40 (1978) to 9.28 (1979). This total rate is the lowest since 1938 when these data were first recorded and represents an 18.60 percent decrease over 1978.

   * The fatal accident rate per 100,000 aircraft hours decreased from 2.01 (1978) to 1.56 (1979). This fatal rate is the lowest since 1938 when these data were first recorded and represents a 22.39 percent decrease over 1978.

2. Substantially fewer aircraft were involved in accidents in 1979 than in 1978 (4,061 down 10.85%), and less people were aboard the aircraft involved in accidents (7,983 down 14.05%). The average accident occupant load factor was 1.97, down 3.43 percent. Counter to these changes, the number of aircraft hours flown increased to 43,340,081 (up 9.97%) and the size of the general aviation fleet increased by 11,561 aircraft (up 5.82%).

3. Engine failure or malfunction continues to be the most frequent type of accident accounting for 24.30% of the total accidents and 11.56% of the fatal accidents.

4. Most fatal accidents (430 or 62.14%) occur during the inflight phase of operation while most nonfatal accidents occur during the landing phase of operation (1,643 accidents 40.46%).

5. Pleasure kind of flying had the highest total (17.40) and fatal (3.34) accident rates per 100,000 aircraft hours flown. Corporate/executive flying had the lowest total (1.68) and fatal (0.30) accident rates.

6. Weather - Low Ceiling is the leading cause/factor for fatal accidents in 1979 with 170 (25.07%) citations and accounting for 380 fatalities (27.80%). Pilot in Command - Continued VFR into Adverse Weather Conditions and Pilot in Command - Failed to Obtain/Maintain Flying Speed are tied for second in 131 accidents with 297 and 247 associated fatalities, respectively.

7. The causal/factors cited most often in nonfatal accidents are Pilot in Command - Inadequate Preflight Preparation and/or Planning, 399 citations followed by Miscellaneous Acts, Conditions - Overload Failure - aircraft component, 334 citations.

Clearly the most significant aviation safety improvement possibilities remain in the area of human factors and weather knowledge. Weather and pilot are the predominate cause/factors of general aviation accidents. Proper preflight preparation and inflight procedures related to weather conditions could have a positive influence on aviation safety and provide the most worthy achievement possibilities for future accident prevention programs. A simple manuever of reversing course and landing at another airport, thereby avoiding an encounter with weather conditions beyond the capability of the pilot in command would prevent numerous fatal accidents every year.

Some other areas that require special emphasis are engine operation and fuel management, airspeed control (stall/spin accidents), takeoff and landing procedures and emergency procedures. In the latter case the Board found the most common factor in light twin-engine accidents was the apparent lack of crew proficiency in response to emergencies created by engine failures. The failure to immediately recall exact emergency procedures and the ability to execute them properly was and has been evident in many of these general aviation accidents. Better initial and recurrent training in emergency procedures would prevent a large number of these type accidents.

BY THE NATIONAL TRANSPORTATION SAFETY BOARD

/s/ JAMES B. KING
Chairman

/s/ ELWOOD T. DRIVER
Vice Chairman

/s/ FRANCIS H. MCADAMS
Member

/s/ PATRICIA A. GOLDMAN
Member

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Member

STATISTICAL INFORMATION

GENERAL AVIATION ACCIDENTS

ALL CATEGORIES OF AIRCRAFT

22-B

STATISTICAL RECAPITUALTION OF ACCIDENTS
U.S. GENERAL AVIATION
1978-1979

	1978	1979
Total Accidents	4,494	4,023
Aircraft Involved 1/	4,557	4,063
Injury Index		
Fatal	793	678
Serious	458	395
Minor	662	603
None	2,581	2,347
Unknown	0	0
Injuries 1/		
Fatal	1,770	1,367
Serious	858	700
Minor	1,317	1,077
None	5,599	4,901
Unknown	0	0
Total Aboard	9,288	7,983
Aircraft Damage 1/		
Destroyed	1,227	1,055
Substantial	3,284	2,956
Minor/None	29	29
None	17	23
Not Reported	0	0
Fire After Impact 1/		
Fatal Accidents	197	183
Nonfatal Accidents	143	145
Active Aircraft (Est.) 2/	198,778	210,339
Hours Flown(000)(Est.) 2/	39,409	43,340
Accident Rates Per 100,000 Hours Flown		
Total	11.40	9.28
Fatal	2.01	1.56

1/ Includes all aircraft involved in collisions
2/ Source: FAA

Note: Suicide accidents are included in all computations except rates (1978-2, 1979-0).

ACCIDENTS, RATES, ACTIVE AIRCRAFT

ALL OPERATIONS

1979

	Single Engine	Multi-Engine	Glider	Balloon	Heli-copter	Gyro-copter
ACCIDENTS	3,156	512	54	20	276	13
AIRCRAFT INVOLVED	3,180	518	54	20	276	13
INJURY INDEX						
Fatal	489	150	2	2	33	6
Serious	289	39	17	15	34	1
Minor	499	41	9	1	50	3
None	1,879	282	26	2	159	3
Unknown	0	0	0	0	0	0
ACTIVE AIRCRAFT (est.) 1/	168,390	30,850	3,810	2,046	5,864	
AIRCRAFT DAMAGE						
Destroyed	778	189	10	5	67	5
Substantial	2,370	324	43	4	206	8
Minor	18	4	1	4	2	0
None	14	1	0	7	1	0
Unknown/Not Reported	0	0	0	0	0	0
HOURS FLOWN (est.) 1/	30,289,011	9,812,556	288,998	68,000	2,555,187	
ACCIDENT RATES PER 100,000 HOURS FLOWN						
Total	10.42	5.22	18.69	29.41	11.31	
Fatal	1.61	1.53	0.69	2.94	1.53	

1/ Source: FAA

ACCIDENTS, RATES, INJURY INDEX, AIRCRAFT DAMAGE
BY KIND OF FLYING
ALL OPERATIONS
1979

	KIND OF FLYING								
	NONCOMMERICAL					COMMERICIAL			
						AIR TAXI			
						SCHEDULED		NONSCHEDULED	
	INSTRUCTIONAL	PLEASURE	BUSINESS	CORPORATE	AERIAL APPLICATION	PASSG.	CARGO	PASSG.	CARGO
ACCIDENTS	515	2066	251	84	395	29	14	117	63
HOURS FLOWN (THOUSANDS OF HOURS) 1/	6,558.3	11,875.3	8,979.5	5,000.5	3,220.4		4,572.6		
ACCIDENT RATES PER 100,000 HOURS FLOWN									
Total Accidents	7.85	17.40	2.80	1.68	12.27		4.88		
Fatal Accidents	0.63	3.34	0.61	0.30	0.84		1.07		
ACCIDENT INJURY INDEX									
Fatal	41	397	55	15	27	11	1	25	12
Serious	39	212	22	5	53	4	2	15	6
Minor	63	338	25	10	75	5	0	14	12
None	372	1,119	149	54	240	9	11	63	33
Unknown/Not Reported	0	0	0	0	0	0	0	0	0
AIRCRAFT DAMAGE									
Destroyed	83	540	73	19	120	12	2	33	19
Substantial	429	1,501	177	64	273	17	12	82	44
Minor	4	15	2	0	2	0	0	0	1
None	3	18	0	0	0	0	0	2	0
Unknown/Not Reported	0	0	0	0	0	0	0	0	0

1/ Source: FAA

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ANALYTIC TABLE

FIRST TYPE OF ACCIDENT BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECINUS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE	2	5	35	385	427	427	10.51
DRAGGED WINGTIP POD OR FLOAT	1			7	8	8	.20
WHEELS-UP LANDING		2	1	69	72	72	1.77
WHEELS-DOWN LANDING IN WATER				5	5	5	.12
GEAR COLLAPSED			3	36	39	39	.96
GEAR RETRACTED				38	38	38	.94
HARD LANDING	1	17	29	206	253	253	6.23
NOSE OVER/DOWN		1	28	108	137	137	3.37
ROLL OVER	1		4	14	19	19	.47
OVERSHOOT	3	8	19	128	158	158	3.89
UNDERSHOOT	10	17	20	75	122	122	3.00
COLLISION BETWEEN AIRCRAFT							
BOTH IN FLIGHT	27	4		18	49	25	1.21
ONE AIRBORNE	2		2	6	10	5	.25
BOTH ON GROUND			2	16	18	10	.44
COLLISION WITH GROUND/WATER							
CONTROLLED	122	30	31	61	244	244	6.01
UNCONTROLLED	112	8	5	5	130	130	3.20
COLLIDED WITH							
WIRES/POLES	30	30	36	53	149	149	3.67
TREES	77	34	33	59	203	203	5.00
RESIDENCE/S	3				3	3	.07
BUILDING/S	1	1	1	6	9	9	.22
FENCE, FENCEPOSTS		2	6	36	44	44	1.08
ELECTRONIC TOWERS	4		2	1	7	7	.17
RUNWAY OR APPROACH LIGHTS			1	4	5	5	.12
AIRPORT HAZARD				7	7	7	.17
ANIMALS				9	9	9	.22
CROP			3	9	12	12	.30
FLAGMAN LOADER	1	1			2	2	.05
DITCHES		3	11	28	42	42	1.03
SNOWBANK		2	3	46	51	51	1.26
PARKED AIRCRAFT (UNATTENDED)	2	1	1	32	36	36	.89
AUTOMOBILE	1	3	3	8	15	15	.37
DIRT BANK		3	2	27	32	32	.79
OTHER	5	6	9	68	86	86	2.12
BIRD STRIKE	1		1	1	3	3	.07

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ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STALL	48	31	19	38	136	136	3.35
SPIN	54	14	7	5	80	80	1.97
SPIRAL	6		1		7	7	.17
MUSH	8	23	29	94	154	154	3.79
FIRE OR EXPLOSION							
IN FLIGHT	5	3	2	16	26	26	.64
ON GROUND				5	5	5	.12
AIRFRAME FAILURE							
IN FLIGHT	40	6	2	22	70	70	1.72
ON GROUND		1	1	6	8	8	.20
ENGINE TEARAWAY			1		1	1	.02
ENGINE FAILURE OR MALFUNCTION	80	115	241	551	987	987	24.30
PROPELLER/ROTOR FAILURE							
PROPELLER	1	4	2	10	17	17	.42
TAIL ROTOR	2	2	2	13	19	19	.47
MAIN ROTOR	2	1	3	7	13	13	.32
PROP ROTOR ACFT TO PERSON	6	14			20	20	.49
JET INTAKE/EXH ACFT TO PERS							
PROPELLER/JET/ROTOR BLAST			1	3	4	4	.10
TURBULENCE	6	4	1	7	18	18	.44
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE							
EVASIVE MANEUVER				4	4	4	.10
UNCONTROLLED ALT DEVIATION							
DITCHING	2			1	3	3	.07
MISSING ACFT NOT RECOVERED	20			1	21	21	.52
MISCELLANEOUS/OTHER	1	3	3	9	16	16	.39
UNDETERMINED	5		1	2	8	8	.20
RECORDS	402	307	605	2347	4061		
ACCIDENTS	378	305	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

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ANALYTIC TABLE

FIRST TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
ALL OPERATIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE	18	407	2		427	427	10.51
DRAGGED WINGTIP POD OR FLOAT		8			8	8	.20
WHEELS-UP LANDING		72			72	72	1.77
WHEELS-DOWN LANDING IN WATER		5			5	5	.12
GEAR COLLAPSED	2	37			39	39	.96
GEAR RETRACTED		37	1		38	38	.94
HARD LANDING	12	234	3	4	253	253	6.23
NOSE OVER/DOWN	6	130	1		137	137	3.37
ROLL OVER	2	17			19	19	.47
OVERSHOOT	10	147	1		158	158	3.89
UNDERSHOOT	25	97			122	122	3.00
COLLISION BETWEEN AIRCRAFT							
BOTH IN FLIGHT	21	22	5	1	49	25	1.21
ONE AIRBORNE		9	1		10	5	.25
BOTH ON GROUND	2	14	2		18	10	.44
COLLISION WITH GROUND/WATER							
CONTROLLED	144	99		1	244	244	6.01
UNCONTROLLED	110	20			130	130	3.20
COLLIDED WITH							
WIRES/POLES	67	81	1		149	149	3.67
TREES	121	82			203	203	5.00
RESIDENCE/S	3				3	3	.07
BUILDING/S	3	6			9	9	.22
FENCE, FENCEPOSTS	5	39			44	44	1.08
ELECTRONIC TOWERS	3	4			7	7	.17
RUNWAY OR APPROACH LIGHTS		5			5	5	.12
AIRPORT HAZARD		7			7	7	.17
ANIMALS	2	7			9	9	.22
CROP	3	9			12	12	.30
FLAGMAN LOADER			2		2	2	.05
DITCHES	5	37			42	42	1.03
SNOWBANK		51			51	51	1.26
PARKED AIRCRAFT (UNATTENDED)	1	32	3		36	36	.89
AUTOMOBILE	1	14			15	15	.37
DIRT BANK	3	29			32	32	.79
OTHER	9	76	1		86	86	2.12
BIRD STRIKE	1	2			3	3	.07

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ANALYTIC TABLE

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STALL	68	68			136	136	3.35
SPIN	63	17			80	80	1.97
SPIRAL	6	1			7	7	.17
MUSH	37	117			154	154	3.79
FIRE OR EXPLOSION							
IN FLIGHT	13	13			26	26	.64
ON GROUND	1	4			5	5	.12
AIRFRAME FAILURE							
IN FLIGHT	41	29			70	70	1.72
ON GROUND	2	6			8	8	.20
ENGINE TEARAWAY	1				1	1	.02
ENGINE FAILURE OR MALFUNCTION	195	791	1		987	987	24.30
PROPELLER/ROTOR FAILURE							
PROPELLER	3	14			17	17	.42
TAIL ROTOR	4	15			19	19	.47
MAIN ROTOR	3	10			13	13	.32
PROP ROTOR ACONT TO PERSON		2	4	14	20	20	.49
JET INTAKE/EXH ACONT TO PERS							
PROPELLER/JET/ROTOR BLAST		4			4	4	.10
TURBULENCE	9	8		1	18	18	.44
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE							
EVASIVE MANEUVER		4			4	4	.10
UNCONTROLLED ALT DEVIATION							
DITCHING	2	1			3	3	.07
MISSING ACFT NOT RECOVERED	21				21	21	.52
MISCELLANEOUS/OTHER	1	12	1	2	16	16	.39
UNDETERMINED	5	3			8		.20
RECORDS	1054	2955	29	23	4061		
ACCIDENTS	1051	2940	29	23		4023	
PERCENTS	26.0	72.8	.7	.6			

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FIRST ACCIDENT TYPE BY SECOND ACCIDENT TYPE

U.S. GENERAL AVIATION

1979

FIRST TYPE OF ACCIDENT — **SECOND TYPE OF ACCIDENT**

FIRST TYPE OF ACCIDENT	TOTAL FIRST TYPES	Ground/water loop/swerve	Dragged wingtip, pod, or float	Wheels-up landing	Wheels-down landing in water	Gear collapsed	Gear retracted	Hard landing	Nose over/down	Roll over	Overshoot	Undershoot	Collision with aircraft: both in flight	Collision with aircraft: one airborne	Collision with aircraft: both on ground	Collision with ground/water: controlled	Collision with ground/water: uncontrolled	Collided with: wires, poles	Collided with: trees	Collided with: residence(s)	Collided with: other buildings	Collided with: fence, fenceposts	Collided with: electronic towers	Collided with: runway or approach lights	Collided with: airport hazard	Collided with: animals	Collided with: crop	Collided with: flagman, leader	Collided with: ditches	Collided with: snowbank	Collided with: parked aircraft (unattended, engines not running)	Collided with: automobile	Collided with: dirt bank	Collided with: other	Bird strike (collision with birds)	Stall	Spin	Spiral	Mush	Fire or explosion: in flight	Fire or explosion: on ground	Airframe failure: in flight	Airframe failure: on ground	Engine tearaway	Engine failure or malfunction	Propeller/rotor failure	Propeller	Tail rotor	Main rotor	Propeller/rotor acc. to person	Jet intake/exhaust acc. to person	Propeller/jet/rotor blast	Turbulence	Hail damage to aircraft	Lightning strike	Evasive maneuver	Uncontrolled altitude deviations	Ditching	Missing aircraft, not recovered	Other/miscellaneous	Undetermined
Ground/water loop/swerve	427				85		2	90						1	5	1	4	18		1	13		5	1		1		25	61	16	2	12	16					2																						
Dragged wingtip, pod, or float	8							2										1																																							
Wheels-up landing	72																																																								
Wheels-down landing in water	5							3																																															
Gear collapsed	39	1						3																																															
Gear retracted	38																																																							
Hard landing	253	5			96			25	1						1			3			2								4	1		2	2		2			1																				
Nose over/down	137																																																							
Roll over	19																																																							
Overshoot	158	8	1		12		2	24							6		7	21		1	21	2	1	1		1		21	3	2		7	13		2																					1		
Undershoot	122			1	16		10	8							7	1	21	21			5		1					2	9		2	7	8		1																							
Collision with aircraft	4																																																							
Both in flight	25																																																							
One airborne	5																																																							
Both on ground	104														1																																										
Collision with ground/water																																																								
Controlled	244				3													1																																								
Uncontrolled	130																																																							
Collided with																																																								
Wires, poles	149			1	1			1							1	1																																									
Trees	203	1						1								1																																								
Residence(s)	3																																																						
Other buildings	9																																																						
Fence, fenceposts	44						1	1																																														
Electronic towers	7																																																						
Runway or approach lights	5				1													1																																					
Airport hazard	7																																																						
Animals	9				1																																																		
Crop	12								1																																														
Flagman, leader	2																																																						
Ditches	42				1			4													1																																		
Snowbank	51				3			7																																															
Parked aircraft (unattended, engines not running)	36																																																				
Automobile	15																																																						
Dirt bank	32				2			2																																														
Other	86			1	7			4	2																																												
Bird strike (collision with birds)	3	1					1																																														
Stall	136																1	2																																						
Spin	80															1																																						
Spiral	7																																																				
Mush	154							1									1	4		1				1																														
Fire or explosion																																																				
In flight	26		2		2			2									3				1							1				1		1																		
On ground	5																																																			
Airframe failure																																																			
In flight	70		1				5	2									2				2	1		1																												
On ground	8	3																														1		1																		
Engine tearaway	1																																																		
Engine failure or malfunction	987	2		37		76	1	86	167	9	4	1			108	11	99	139	5	5	52	1	2		24		33	4	2	8	19	53		26	10	2	14	2		1							1		32			
Propeller/rotor failure	0																																																		
Propeller	17			2		1			2		2				2	1	1				1												3																	1		
Tail rotor	19							10		2					2	1		1																																		
Main rotor	13							5	1	1					2	1		1																																	
Propeller/rotor acc. to person	20																																																		
Jet intake/exhaust acc. to person	0																																																	
Propeller/jet/rotor blast	4																																																	
Turbulence	18	1														7		2																	2				2										
Hail damage to aircraft	0																																																	
Lightning strike	0																																																	
Evasive maneuver	4								1																			1	1			1																		
Uncontrolled altitude deviations	0																																																	
Ditching	3																																																	
Missing aircraft, not recovered	21																																																	
Other/miscellaneous	16	1						2							1	1		1										1																						
Undetermined	8																																																	
TOTAL SECOND ACCIDENT TYPE		23	1	45	0	308	1	122	350	16	6	1	0	0	1	137	32	89	214	5	10	97	4	9	2	0	28	0	84	82	22	14	47	98	0	34	10	2	20	3	0	3	0	0	1	0	0	1	1	2	0	0	0	0	0	1	0	33	0	1	0
TOTAL FIRST ACCIDENT TYPE		427	8	72	5	39	38	253	137	19	158	122	25	5	10	299	130	149	203	3	9	99	7	5	7	9	12	2	42	51	36	15	32	86	3	136	60	7	159	26	5	70	8	1	988	0	17	19	13	20	0	4	18	0	0	4	0	3	21	16	8
TOTAL TYPES		450	9	117	5	347	39	375	487	35	164	123	25	5	11	381	162	238	417	8	19	191	11	14	9	9	40	2	126	133	58	29	79	184	3	170	70	9	179	29	5	73	8	1	989	0	17	20	14	22	0	4	18	0	0	5	0	36	21	17	8

a The 25 midair collision accidents involve 48 general aviation (civilian) and one military aircraft. A total of 50 aircraft records for 25 midair collision accidents.

b The 10 ground collisions involve one air carrier aircraft (not tabulated in this review) and a general aviation aircraft which groundlooped* before a collision with another general aviation aircraft. These two records must be added to the 18 records displayed on the analytic tables to correct the total to a count of 20 aircraft records for the 10 ground collision accidents.
(*Groundloop is 1st accident type -- collision is 2nd accident type for ½ of this collision record or for 1 of the collision aircraft.)

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ANALYTIC TABLE

FIRST PHASE OF OPERATION BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STATIC							
STARTING ENGINE/S		5	1	7	13	13	.32
IDLING ENGINE/S	5	9	1	3	18	18	.44
ENGINE RUNUP	1			1	2	2	.05
IDLING ROTORS		2			2	2	.05
PARKED-ENGINES NOT OPERATING							
OTHER				2	2	2	.05
TAXI							
TO TAKEOFF		2	2	48	52	50	1.28
FROM LANDING	1		5	41	47	47	1.16
OTHER		2	4	15	21	21	.52
GROUND TAXI TO TAKEOFF							
GROUND TAXI FROM LANDING				3	3	3	.07
GROUND TAXI, OTHER				1	1	1	.02
AERIAL TAXI TO TAKEOFF				1	1	1	.02
AERIAL TAXI TO/FROM LANDING				3	3	3	.07
AERIAL TAXI, OTHER		1		2	3	3	.07
TAKEOFF							
RUN	6	5	26	156	193	192	4.75
INITIAL CLIMB	80	58	112	248	498	497	12.26
VERTICAL	1	5	5	23	34	34	.84
RUNNING (ROTORCRAFT/VTOL-STOL)							
ABORTED (FIXED-WING)	1	3	13	61	78	78	1.92
ABORTED (ROTORCRAFT/VTOL)							
ABORTED (ROTORCRAFT/STOL)				1	1	1	.02
OTHER		1		2	3	3	.07
INFLIGHT							
CLIMB TO CRUISE	36	10	21	37	104	103	2.56
NORMAL CRUISE	151	77	107	280	615	606	15.14
DESCENDING	13	10	15	43	81	81	1.99
HOLDING (IFR)							
HOVERING	4	2	3	8	17	17	.42
POWER-ON DESCENT (ROTORCRAFT)		1			1	1	.02
AUTOROTATIVE DESCENT	1			1	2	2	.05
ACROBATICS	25	2	3	4	34	34	.84
BUZZING	23	2	1	3	29	29	.71
UNCONTROLLED DESCENT	85	2		4	91	91	2.24

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EMERGENCY DESCENT	2				2	2	.05
LOW PASS	31	15	4	23	73	73	1.80
OTHER	40	15	9	40	104	104	2.56
EN ROUTE TO TREAT CROP	1	5	1	5	12	12	.30
EN ROUTE TO RELOADING AREA	1		2	4	7	7	.17
SURVEY FIELD/AREA	1	1	2	3	7	7	.17
STARTING SWATH RUN	4	3	5	12	24	24	.59
SWATH RUN	3	15	21	36	75	75	1.85
FLAREOUT FOR SWATH RUN	1	1	1	6	9	9	.22
PULLUP FROM SWATH RUN	4	7	12	13	36	36	.89
PROCEDURE TURNAROUND	3	11	12	35	61	61	1.50
CLEANUP SWATH		1	2	6	9	9	.22
MANEUVER TO AVOID OBSTRUCTION				1	1	1	.02
RETURN TO STRIP	1		3	4	8	8	.20
LANDING							
TRAFFIC PATTERN-CIRCLING	30	16	23	31	100	97	2.46
FINAL APPROACH (VFR)	36	36	49	122	243	239	5.98
INITIAL APPROACH	5	2	1	2	10	10	.25
FINAL APPROACH (IFR)	27	7	7	11	52	52	1.28
LEVEL OFF/TOUCHDOWN	9	33	62	490	594	593	14.63
ROLL (FIXED WING)	3	5	42	414	464	464	11.43
ROLL-ON/RUN-ON (ROTORCRAFT)			1	3	4	4	.10
POWER-ON LANDING (ROTORCRAFT)		1	5	9	15	15	.37
POWER-OFF AUTOROTATIVE LDG		2	2	12	16	16	.39
GO-AROUND (VFR)	18	13	16	70	117	117	2.88
MISSED APPROACH (IFR)	9	4	1		14	14	.34
OTHER	1	4	2	7	14	14	.34
UNKNOWN/NOT REPORTED	29	1	1	10	41	41	1.01
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

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ANALYTIC TABLE

FIRST PHASE OF OPERATION BY AIRCRAFT DAMAGE
ALL OPERATIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STATIC							
STARTING ENGINE/S		9	1	3	13	13	.32
IDLING ENGINE/S		5	3	10	18	18	.44
ENGINE RUNUP		2			2	2	.05
IDLING ROTORS	1			1	2	2	.05
PARKED-ENGINES NOT OPERATING							
OTHER		2			2	2	.05
TAXI							
TO TAKEOFF	1	48	3		52	50	1.28
FROM LANDING	1	44	2		47	47	1.16
OTHER	2	19			21	21	.52
GROUND TAXI TO TAKEOFF							
GROUND TAXI FROM LANDING		3			3	3	.07
GROUND TAXI, OTHER	1				1	1	.02
AERIAL TAXI TO TAKEOFF		1			1	1	.02
AERIAL TAXI TO/FROM LANDING		3			3	3	.07
AERIAL TAXI, OTHER		3			3	3	.07
TAKEOFF							
RUN	18	174	1		193	192	4.75
INITIAL CLIMB	145	352	1		498	497	12.26
VERTICAL	6	28			34	34	.84
RUNNING (ROTORCRAFT/VTOL-STOL)							
ABORTED (FIXED-WING)	6	72			78	78	1.92
ABORTED (ROTORCRAFT/VTOL)							
ABORTED (ROTORCRAFT/STOL)		1			1	1	.02
OTHER		2	1		3	3	.07
INFLIGHT							
CLIMB TO CRUISE	44	59	1		104	103	2.56
NORMAL CRUISE	210	401	2	2	615	606	15.14
DESCENDING	26	55			81	81	1.99
HOLDING (IFR)							
HOVERING	4	13			17	17	.42
POWER-ON DESCENT (ROTORCRAFT)		1			1	1	.02
AUTOROTATIVE DESCENT		1	1		2	2	.05
ACROBATICS	27	7			34	34	.84
BUZZING	23	6			29	29	.71
UNCONTROLLED DESCENT	83	8			91	91	2.24

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ANALYTIC TABLE

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EMERGENCY DESCENT	2				2	2	.05
LOW PASS	40	33			73	73	1.80
OTHER	47	57			104	104	2.56
EN ROUTE TO TREAT CROP	1	11			12	12	.30
EN ROUTE TO RELOADING AREA	2	5			7	7	.17
SURVEY FIELD/AREA	3	4			7	7	.17
STARTING SWATH RUN	13	10	1		24	24	.59
SWATH RUN	21	53	1		75	75	1.85
FLAREOUT FOR SWATH RUN	3	6			9	9	.22
PULLUP FROM SWATH RUN	18	18			36	36	.89
PROCEDURE TURNAROUND	22	39			61	61	1.50
CLEANUP SWATH	4	5			9	9	.22
MANEUVER TO AVOID OBSTRUCTION		1			1	1	.02
RETURN TO STRIP	1	7			8	8	.20
LANDING							
TRAFFIC PATTERN-CIRCLING	42	57	1		100	97	2.46
FINAL APPROACH (VFR)	62	180	1		243	239	5.98
INITIAL APPROACH	8	2			10	10	.25
FINAL APPROACH (IFR)	34	18			52	52	1.28
LEVEL OFF/TOUCHDOWN	32	551	5	6	594	593	14.63
ROLL (FIXED WING)	17	443	4		464	464	11.43
ROLL-ON/RUN-ON (ROTORCRAFT)	1	3			4	4	.10
POWER-ON LANDING (ROTORCRAFT)	3	12			15	15	.37
POWER-OFF AUTOROTATIVE LDG	1	15			16	16	.39
GO-AROUND (VFR)	34	83			117	117	2.88
MISSED APPROACH (IFR)	10	4			14	14	.34
OTHER	3	10		1	14	14	.34
UNKNOWN/NOT REPORTED	32	9			41	41	1.01
RECORDS	1054	2955	29	23	4061		
ACCIDENTS	1051	2940	29	23		4023	
PERCENTS	26.0	72.8	.7	.6			

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CAUSE/FACTOR TABLE

U.S. GENERAL AVIATION ACCIDENTS
ALL OPERATIONS
1979

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 4023 TOTAL ACCIDENTS

INVOLVES 678 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	563 83.04	132 19.47	572 84.37	2624 78.45	264 7.89	2649 79.19	3187 79.22	396 9.84	3221 80.06
PERSONNEL	51 7.52	35 5.16	84 12.39	246 7.35	39 1.17	283 8.46	297 7.38	74 1.84	367 9.12
AIRFRAME	9 1.33	16 2.36	24 3.54	15 .45	9 .27	24 .72	24 .60	25 .62	48 1.19
LANDING GEAR	 .00	 .00	 .00	125 3.74	17 .51	142 4.25	125 3.11	17 .42	142 3.53
POWERPLANT	53 7.82	5 .74	57 8.41	506 15.13	40 1.20	538 16.08	559 13.90	45 1.12	595 14.79
SYSTEMS	8 1.18	2 .29	10 1.47	40 1.20	16 .48	56 1.67	48 1.19	18 .45	66 1.64
INSTRUMENTS/EQUIPMENT & ACCESSORIES	1 .15	3 .44	4 .59	5 .15	7 .21	12 .36	6 .15	10 .25	16 .40
ROTORCRAFT	11 1.62	 .00	11 1.62	35 1.05	 .00	35 1.05	46 1.14	 .00	46 1.14
AIRPORT/AIRWAYS/FACILITIES	 .00	10 1.47	10 1.47	24 .72	291 8.70	315 9.42	24 .60	301 7.48	325 8.08
WEATHER	6 .88	274 40.41	276 40.71	37 1.11	571 17.07	603 18.03	43 1.07	845 21.00	879 21.85
TERRAIN	1 .15	93 13.72	94 13.86	97 2.90	713 21.32	808 24.16	98 2.44	806 20.03	902 22.42
MISCELLANEOUS	18 2.65	4 .59	22 3.24	100 2.99	30 .90	128 3.83	118 2.93	34 .85	150 3.73
UNDETERMINED	57 8.41	 .00	57 8.41	42 1.26	 .00	42 1.26	99 2.46	 .00	99 2.46

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

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CAUSE/FACTOR TABLE

U.S. GENERAL AVIATION ACCIDENTS
ALL OPERATIONS
1979

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 4023 TOTAL ACCIDENTS

INVOLVES 478 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT	5	5	10	18	6	24	23	11	34
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	21	12	33	11	11	22	32	23	55
BECAME LOST/DISORIENTED	15	5	20	37	9	46	52	14	66
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	129	2	131	41	6	47	170	8	178
CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE	9		9	3		3	12		12
DELAYED ACTION IN ABORTING TAKEOFF				70	3	73	70	3	73
DELAYED IN INITIATING GO-AROUND	4	2	6	102	1	103	106	3	109
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	8	8	16	31	14	45	39	22	61
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	19		19	4		4	23		23
FAILED TO EXTEND LANDING GEAR				33		33	33		33
FAILED TO RETRACT LANDING GEAR	1	2	3	5		5	6	2	8
RETRACTED GEAR PREMATURELY				4		4	4		4
INADVERTENTLY RETRACTED GEAR				10		10	10		10
FAILED TO SEE AND AVOID OTHER AIRCRAFT	17		17	28		28	45		45
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	26		26	114	1	115	140	1	141
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	131		131	240		240	371		371
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE	11		11	9	1	10	20	1	21
FAILED TO MAINTAIN ADEQUATE ROTOR RPM	3		3	32	1	33	35	1	36
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT	1	3	4	10	5	15	11	8	19
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	19	5	24	42	6	48	61	11	72
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	4		4	94	5	99	98	5	103
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				153	2	155	153	2	155
IMPROPER OPERATION OF FLIGHT CONTROLS	7	1	8	45	2	47	52	3	55
PREMATURE LIFT OFF	3		3	53	6	59	56	6	62
IMPROPER LEVEL OFF	2		2	199		199	201		201
IMPROPER IFR OPERATION	36	1	37	21	1	22	57	2	59
IMPROPER INFLIGHT DECISIONS OR PLANNING	41	3	44	103	10	113	144	13	157
IMPROPER COMPENSATION FOR WIND CONDITIONS	1		1	110	7	117	111	7	118
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	61	29	90	359	40	399	420	69	489
INADEQUATE SUPERVISION OF FLIGHT	7	2	9	81	2	83	88	4	92
LACK OF FAMILIARITY WITH AIRCRAFT	3	18	21	16	71	87	19	89	108
MISMANAGEMENT OF FUEL	12	1	13	244	1	245	256	2	258
EXERCISED POOR JUDGMENT	13	13	26	29	4	33	42	17	59
OPERATED CARELESSLY				2	2	4	2	2	4
SELECTED UNSUITABLE TERRAIN	3		3	216	8	224	219	8	227
IMPROPER STARTING PROCEDURES		1	1	6	1	7	6	2	8
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT				15		15	15		15
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				14		14	14		14
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				20	1	21	20	1	21
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS	22	3	25	22	2	24	44	5	49
CONTROL INTERFERENCE	1		1				1		1
SPONTANEOUS-IMPROPER ACTION	1	1	2	7		7	8	1	9
MISJUDGED DISTANCE, SPEED, AND ALTITUDE	7		7	26		26	33		33
MISJUDGED DISTANCE AND SPEED	3		3	152	2	154	155	2	157
MISJUDGED DISTANCE	1		1	6		6	7		7
MISJUDGED DISTANCE AND ALTITUDE	9		9	105		105	114		114
MISJUDGED SPEED AND ALTITUDE	1		1	14		14	15		15
MISJUDGED SPEED				4		4	4		4
MISJUDGED SPEED AND CLEARANCE	1		1	3		3	4		4
MISJUDGED ALTITUDE AND CLEARANCE	29		29	37		37	66		66
MISJUDGED ALTITUDE	11		11	16	1	17	27	1	28
MISJUDGED CLEARANCE	13		13	88		88	101		101
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				2		2	2		2
IMPROPER RECOVERY FROM BOUNCED LANDING	1		1	109	3	112	110	3	113
INCAPACITATION	4	1	5	1		1	5	1	6
PHYSICAL IMPAIRMENT	17	22	39	6	4	10	23	26	49
SPATIAL DISORIENTATION	86		86	5		5	91		91
PSYCHOLOGICAL CONDITION	1		1				1		1
MISUSED OR FAILED TO USE FLAPS	3	6	9	17	11	28	20	17	37
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING				1	1	2	1	1	2

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FAILED TO MAINTAIN DIRECTIONAL CONTROL (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FAILED TO MAINTAIN DIRECTIONAL CONTROL	2		2	179		179	181		181
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND		2	2	53	16	69	53	18	71
FAILED TO ABORT TAKEOFF	10	1	11	48	5	53	58	6	64
FAILED TO INITIATE GO-AROUND		2	2	118	2	120	118	4	122
DIRECT ENTRIES	3		3	3		3	6		6
SUBTOTAL	838	151	989	3646	274	3920	4484	425	4909
COPILOT									
BECAME LOST/DISORIENTED					1	1		1	1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED				1		1	1		1
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC					1	1		1	1
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS	1		1				1		1
IMPROPER LEVEL OFF				1		1	1		1
IMPROPER IFR OPERATION	1		1				1		1
LACK OF FAMILIARITY WITH AIRCRAFT					1	1		1	1
FAILURE TO RELINQUISH CONTROL				1		1	1		1
MISJUDGED DISTANCE AND SPEED				2		2	2		2
MISJUDGED DISTANCE AND ALTITUDE	1		1				1		1
MISJUDGED ALTITUDE AND CLEARANCE	1		1				1		1
MISJUDGED CLEARANCE				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
SPATIAL DISORIENTATION	1		1				1		1
MISUSED OR FAILED TO USE FLAPS	1		1				1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				1		1	1		1
SUBTOTAL	6		6	9	3	12	15	3	18
DUAL STUDENT									
DELAYED IN INITIATING GO-AROUND				1		1	1		1
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				1		1	1		1
EXCEEDED DESIGNED STRESS LIMITS OF AIRCRAFT				1		1	1		1
FAILED TO EXTEND LANDING GEAR				1		1	1		1
INADVERTENTLY RETRACTED GEAR				2		2	2		2
FAILED TO SEE OTHER AIRCRAFT	2		2	1		1	3		3
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS				4		4	4		4
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	2		2	6	1	7	8	1	9
FAILED TO MAINTAIN ADEQUATE ROTOR RPM				1		1	1		1
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				7		7	7		7
IMPROPER OPERATION OF FLIGHT CONTROLS				3		3	3		3
PREMATURE LIFT-OFF				2		2	2		2
IMPROPER LEVEL OFF				9		9	9		9
IMPROPER IFR OPERATION	1		1				1		1
IMPROPER COMPENSATION FOR WIND CONDITIONS				6		6	6		6
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				1		1	1		1
LACK OF FAMILIARITY WITH AIRCRAFT		1	1		4	4		5	5
MISMANAGEMENT OF FUEL				1		1	1		1
SELECTED UNSUITABLE TERRAIN				1	1	2	1	1	2
FAILURE TO RELINQUISH CONTROL				1		1	1		1
SPONTANEOUS-IMPROPER ACTION				2		2	2		2
MISJUDGED DISTANCE, SPEED, AND ALTITUDE				1		1	1		1
MISJUDGED DISTANCE AND SPEED				2		2	2		2
MISJUDGED DISTANCE AND ALTITUDE				5		5	5		5
MISJUDGED SPEED AND ALTITUDE				2		2	2		2
MISJUDGED SPEED				1		1	1		1
MISJUDGED ALTITUDE AND CLEARANCE				1		1	1		1
MISJUDGED ALTITUDE				1		1	1		1
MISJUDGED CLEARANCE				2		2	2		2
IMPROPER RECOVERY FROM BOUNCED LANDING				3		3	3		3
SPATIAL DISORIENTATION	1		1				1		1
MISUSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				6		6	6		6
FAILED TO INITIATE GO-AROUND				2		2	2		2
SUBTOTAL	6	1	7	78	6	84	84	7	91
CHECK PILOT									
FAILED TO SEE OTHER AIRCRAFT	1		1				1		1
INADEQUATE SUPERVISION OF FLIGHT				5	1	6	5	1	6
EXERCISED POOR JUDGEMENT					1	1		1	1
SUBTOTAL	1		1	5	2	7	6	2	8

** PERSONNEL **

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CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
RULES, REGULATIONS, STANDARDS PERSONNEL		3	3		1	1		4	4
FLIGHT INSTRUCTOR									
INADEQUATE SUPERVISION OF FLIGHT		1	1	4	3	7	4	4	8
INADEQUATE TRAINING OF STUDENT					3	3		3	3
MAINTENANCE, SERVICING, INSPECTION									
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)	6	1	7	37	1	38	44	2	45
IMPROPER MAINTENANCE(OWNER PERSONNEL)	5	1	6	3		3	8	1	9
IMPROPERLY SERVICED AIRCRAFT(GROUND CREW)	1		1	3		3	4		4
IMPROPERLY SERVICED AIRCRAFT(OWNER-PILOT)	1		1	2		2	3		3
INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNEL)	1	2	3	6	1	7	7	3	10
INADEQUATE INSPECTION OF ACFT(OWNER-PILOT PERSONNEL)		1	1	2		2	2	1	3
INADEQUATE MAINTENANCE AND INSPECTION	11	7	18	106	8	114	117	15	132
OTHER	1		1	6		6	7		7
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE FLIGHT TRAINING-PROCEDURES		3	3		1	1		4	4
INADEQUATE GROUND TRAINING-PROCEDURES		2	2					2	2
INADEQUATE SUPERVISION OF FLIGHT CREW		2	2					2	2
INADEQUATE SUPERVISION/TRAINING OF RAMP CREWS	1		1				1		1
FAILURE TO PROVIDE ADEQ DIRECTIVES, MANUALS, EQUIPMENT					1	1		1	1
DEFICIENCY, COMPANY MAINTAINED EQMT, SERV, REGULATIONS		4	4	3		3	3	4	7
WEATHER PERSONNEL									
INCORRECT WEATHER FORECAST		1	1	1	1	2	1	2	3
INCOMPLETE WEATHER REPORT		1	1					1	1
INADEQUATE/INCORRECT WEATHER BRIEFING		2	2	1		1	1	2	3
TRAFFIC CONTROL PERSONNEL									
FAILURE TO ADVISE OF UNSAFE WEATHER CONDITION		2	2					2	2
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS	2	1	3	2		2	4	1	5
INADEQUATE SPACING OF AIRCRAFT	1		1		1	1	1	1	2
FAILURE TO PROPERLY IDENTIFY AIRCRAFT ON RADAR		1	1					1	1
OTHER		2	2			5	5	2	7
AIRPORT SUPERVISORY PERSONNEL									
FAILURE TO NOTIFY OF UNSAFE COND/AND OR FAILURE TO MARK				2	2	4	2	2	4
IMPROPER/INADEQUATE SNOW REMOVAL				1	4	5	1	4	5
OTHER					1	1		1	1
AIRWAYS FACILITIES PERSONNEL					1	1		1	1
FAILURE TO ISSUE NOTAM								1	1
OTHER		1	1						
PRODUCTION-DESIGN-PERSONNEL									
SUBSTANDARD QUALITY CONTROL				2	1	3	2	1	3
POOR/INADEQUATE DESIGN		1	1	4	1	5	4	2	6
OTHER	3	1	4	2	1	3	5	2	7
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	21		21	33	1	34	54	1	55
GROUND SIGNALMAN					2	2		2	2
SPECTATOR	1		1	1		1	2		2
GROUND CREWMAN				2	2	4	2	2	4
PASSENGER	2	1	3	14	2	16	16	3	19
DRIVER OF VEHICLE	1		1	15	2	17	16	2	18
OTHER	2	1	3	5	1	6	7	2	9
DIRECT ENTRIES	1		1				1		1
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	61	42	103	262	42	304	323	84	407
** AIRFRAME **									
WINGS									
SPARS	2	11	13				2	11	13
RIBS, STRINGERS, CAP STRIPS				1		1	1		1
WING ATTACHMENT FITTINGS, BOLTS	3	2	5				3	2	5
BRACING WIRES, STRUTS				1		1	1		1
SKIN AND ATTACHMENTS	1	1	2		2	2	1	3	4
FUSELAGE									
DOORS, DOOR FRAMES				2	2	4	2	2	4
WINDSHIELDS, WINDOWS, CANOPIES		1	1	2	1	3	2	2	4
SEATS		1	1	4	1	5	4	2	6
OTHER				2		2	2		2
LANDING GEAR									
MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC				22		22	22		22
NORMAL RETRACTION/EXTENSION ASSEMBLY				33	2	35	33	2	35
EMERGENCY/EXTENSION ASSEMBLY				4		4	4		4
TAILWHEEL ASSEMBLIES				5		5	5		5
NOSEWHEEL ASSEMBLIES				6	1	7	6	1	7

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

AIRFRAME (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
WHEELS, TIRES, AXLES				6	2	8	6	2	8
SKI ASSEMBLIES				1		1	1		1
FLOAT ASSEMBLIES				2		2	2		2
SKID ASSEMBLY				2		2	2		2
BRAKING SYSTEM (NORMAL)				37	3	40	37	3	40
BRAKING SYSTEM (EMERGENCY)					1	1		1	1
LANDING GEAR WARNING AND INDICATING COMPONENTS					7	7		7	7
GEAR LOCKING MECHANISM				6		6	6		6
SWITCHES, LEVERS, CRANKING MECHANISM, ETC				1	1	2	1	1	2
NOSEWHEEL STEERING				4		4	4		4
OTHER				3		3	3		3
FLIGHT CONTROL SURFACES									
ELEVATOR, ASSEMBLY ATTACHMENTS		1	1	2	1	3	2	2	4
RUDDER, SURFACES ATTACHMENTS	2	1	3				2	1	3
AILERON, SURFACES ATTACHMENTS					1	1		1	1
HORIZONTAL STABILIZER, ATTACHMENTS		4	4					4	4
VERTICAL STABILIZER, ATTACHMENTS	1		1	1		1	2		2
FLAP ASSEMBLIES					1	1		1	1
SUBTOTAL	9	22	31	147	26	173	156	48	204
** POWERPLANT **									
ENGINE STRUCTURE									
CRANKCASE	1		1	1		1	2		2
CRANKSHAFT	2		2	10		10	12		12
MASTER AND CONNECTING RODS	3		3	19	1	20	22	1	23
CYLINDER ASSEMBLY	1		1	23	1	24	24	1	25
PISTON, PISTON RINGS	2		2	4	1	5	6	1	7
VALVE ASSEMBLIES	3		3	32	1	33	35	1	36
BLOWER, IMPELLER ASSEMBLY				5		5	5		5
OTHER				9	1	10	9	1	10
IGNITION SYSTEM									
MAGNETOS		1	1	17	2	19	17	3	20
SPARK PLUG				8	1	9	8	1	9
IGNITION HARNESS, SHIELDING					1	1		1	1
SWITCHES				1	1	2	1	1	2
LEADS				1		1	1		1
OTHER				2		2	2		2
FUEL SYSTEM									
TANKS	1		1	1		1	2		2
LINES AND FITTINGS	1		1	14	1	15	15	1	16
SELECTOR VALVES	1		1	11		11	12		12
FILTERS, STRAINERS, SCREENS				5		5	5		5
CARBURETOR	1		1	20	2	22	21	2	23
PUMPS		1	1	13	1	14	13	2	15
FUEL INJECTION SYSTEM	1		1	9		9	10		10
VENTS, DRAINS, TANK CAPS				13	3	16	13	3	16
RAM AIR ASSEMBLY	2		2	6		6	8		8
OTHER	1		1	6	1	7	7	1	8
LUBRICATING SYSTEM									
LINES, HOSES, FITTINGS	1	1	2	9		9	10	1	11
VALVES				1		1	1		1
FILTERS, SCREENS				4		4	4		4
PUMP-PRESSURE				2		2	2		2
OIL COOLERS				2		2	2		2
SEALS AND GASKETS				3		3	3		3
OTHER	1		1	5		5	6		6
COOLING SYSTEM									
COWLING		1	1					1	1
BAFFLES	1		1	1		1	2		2
OTHER					1	1		1	1
PROPELLER AND ACCESSORIES									
BLADES				7		7	7		7
HYDRAULIC PITCH CONTROL MECHANISM				2		2	2		2
GOVERNORS		1	1	4		4	4	1	5
BLADE RETENTION MECHANISM				2		2	2		2
OTHER	1		1	2		2	3		3
EXHAUST SYSTEM									
MANIFOLDS				3		3	3		3
MUFFLERS				1		1	1		1
STACKS	1		1	1		1	2		2
BAFFLES				1		1	1		1
EXTERNAL SUPERCHARGER	1		1				1		1
OTHER				1		1	1		1
ENGINE ACCESSORIES									

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
STARTERS					1	1		1	1
OTHER				2		2	2		2
ENGINE CONTROLS				10	4	14	10	4	14
THROTTLE-POWER LEVER ASSEMBLIES	1		1	1		1	2		2
MIXTURE CONTROL ASSEMBLIES				2		2	2		2
INDUCTION AIR, PREHEAT CONTROLS									
POWERPLANT-INSTRUMENTS		1	1		19	19		20	20
FUEL QUANTITY GAUGE					1	1		1	1
FUEL FLOW INDICATOR					1	1		1	1
OTHER									
MISCELLANEOUS	24		24	208		208	234		234
POWERPLANT FAILURE FOR UNDETERMINED REASONS				3		3	3		3
FOREIGN OBJECT DAMAGE				2		2	2		2
DETONATION				1		1	1		1
OTHER									
REDUCTION GEAR ASSEMBLY									
COMPRESSOR ASSEMBLY				1		1	1		1
BLADE, COMPRESSOR ROTOR	1		1				1		1
BEARING, ROTOR SHAFT				1		1	1		1
SHAFT, ROTOR									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY				1		1	1		1
WHEEL, TURBINE				2		2	2		2
BLADE, TURBINE WHEEL				1		1	1		1
SEALS, AIR-OIL				3		3	3		3
BEARING, SHAFT									
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM				1		1	1		1
OTHER									
FUEL SYSTEM				2		2	2		2
PUMP, FUEL				4		4	4		4
FUEL CONTROL				1		1	1		1
OTHER									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM					1	1		1	1
CONTROL UNIT, PCV	1		1				1		1
OTHER									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL	55	6	61	527	46	573	582	52	634
** SYSTEMS **									
ELECTRICAL SYSTEM				4	4	8	4	4	8
BATTERIES					1	1		1	1
AMMETERS/VOLTMETERS				2	2	4	3	2	5
GENERATORS/ALTERNATORS	1		1	1		1	1		1
REGULATOR				3		3	4		4
RELAYS AND WIRING	1		1	1	3	4	1	3	4
SWITCHES					1	1		1	1
PROTECTIVE DEVICES					3	3		3	3
OTHER									
HYDRAULIC SYSTEM	1		1	2	1	3	3	1	4
HYDRAULIC PUMPS				6		6	6		6
RESERVOIR, LINES, FITTINGS				4		4	4		4
SEALS				1		1	1		1
RELIEF VALVE				1		1	1		1
SHUT-OFF VALVE				1		1	1		1
OTHER									
FLIGHT CONTROL SYSTEMS				1		1	3		3
AILERON AND AILERON TAB CONTROL SYSTEM	2		2	4		4	6		6
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM	2		2	4		4	4		4
RUDDER AND RUDDER TAB CONTROL SYSTEM					1	1		2	2
WING FLAP CONTROL SYSTEM (ELECTRICAL)		1	1	1		1	1		1
WING FLAP CONTROL SYSTEM (MECHANICAL)				1		1	1		1
OTHER									

BEST DOCUMENT AVAILABLE

SYSTEMS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
ANTI-ICING, DE-ICING SYSTEMS									
EMPENNAGE ANTI-ICING, DE-ICING SYSTEMS				1		1	1		1
WINDSHIELD ANTI-ICING, DE-ICING SYSTEMS	1		1	1		1	2		2
CARBURETOR DE-ICING SYSTEM				1		1	1		1
OTHER		1	1					1	1
AIR CONDITION, HEATING AND PRESSURIZATION									
OTHER	1		1				1		1
AUTO PILOT									
FIRE WARNING SYSTEM									
POWERPLANT					1	1		1	1
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
VACUUM SYSTEM				1		1	1		1
OTHER				1		1	1		1
SUBTOTAL	9	2	11	42	17	59	51	19	70
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
ALTIMETERS				1		1	1		1
AIRSPEED					2	2		2	2
DIRECTIONAL GYRO		1	1					1	1
FLUXGATE COMPASS	1		1				1		1
COMMUNICATIONS AND NAVIGATION EQUIPMENT				1	1	2	1	1	2
TRANSMITTERS AND/OR RECEIVERS								1	1
LORAN RECEIVER		1	1						
DME					1	1		1	1
OTHER		2	2		3	3		5	5
MISCELLANEOUS EQUIPMENT									
SPRAY, DUSTING EQUIPMENT				1		1	1		1
GLIDER LAUNCH/TOW EQUIPMENT				2		2	2		2
SUBTOTAL	1	4	5	5	7	12	6	11	17
** ROTORCRAFT **									
ROTOR ASSEMBLIES									
MAIN ROTOR BLADES				1		1	1		1
TAIL ROTOR BLADES	2		2	4		4	6		6
MAIN ROTOR HEAD ASSEMBLIES	1		1	2		2	3		3
UNIVERSAL JOINTS, COUPLINGS				1		1	1		1
BEARINGS	1		1				1		1
OTHER				3		3	3		3
TRANSMISSION ROTOR DRIVE SYSTEM									
ENGINE DRIVE SHAFT				3		3	3		3
MAIN ROTOR DRIVE SHAFT	1		1				1		1
MAIN ROTOR BRAKE ASSEMBLY				1		1	1		1
MAIN ROTOR PULLEYS, BELTS				2		2	2		2
TAIL ROTOR DRIVE SHAFT ASSEMBLY	1		1	6		6	7		7
TAIL ROTOR GEAR BOX				3		3	3		3
CLUTCH ASSEMBLY				3		3	3		3
SPRAG SYSTEM				3		3	4		3
OTHER	1		1	2		2	3		3
FLIGHT CONTROL SYSTEMS									
CYCLIC PITCH CONTROL SYSTEM	2		2				2		2
COLLECTIVE PITCH CONTROL SYSTEM	1		1				1		1
TAIL ROTOR PITCH CONTROL SYSTEM				3		3	3		3
MISCELLANEOUS UNITS AND ASSEMBLIES									
TAIL BOOMS/PYLONS/CONES	1		1				1		1
OTHER	1		1				1		1
SUBTOTAL	12		12	37		37	49		49
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
RUNWAY LIGHTING					12	12		12	12
RAMP FACILITIES					1	1		1	1
OBSTRUCTION LIGHTING					1	1		1	1
OTHER		1	1	1	3	4	1	4	5
AIRPORT CONDITIONS									
WET RUNWAY		1	1	3	59	62	3	60	63
ICE/SLUSH ON RUNWAY		2	2	1	30	31	1	32	33
SNOW ON RUNWAY		1	1	5	47	52	5	48	53

BEST DOCUMENT AVAILABLE

AIRPORTS/AIRWAYS/FACILITIES (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
SNOW WINDROWS					34	34		34	34
UNMARKED OBSTRUCTIONS					7	7		7	7
SOFT SHOULDERS (RUNWAY)				1	18	19	1	18	19
GLASSY WATER					3	3		3	3
ROUGH WATER		1	1		1	1		2	2
HIGH VEGETATION		1	1	4	14	18	4	15	19
HIDDEN HAZARD				5	6	11	5	6	11
POORLY MAINTAINED RUNWAY SURFACE				1	22	23	1	22	23
SOFT RUNWAY		1	1	1	28	29	1	29	30
WET RAMP/TAXIWAY					1	1		1	1
ICE/SLUSH ON RAMP/TAXIWAY					1	1		1	1
SNOW ON RAMP/TAXIWAY				1	3	4	1	3	4
POORLY MAINTAINED RAMP/TAXIWAY SURFACE				1		1	1		1
OTHER		2	2	5	57	62	5	59	64
AIRWAYS FACILITIES								1	1
H FACILITY		1	1					1	1
OTHER		1	1						
SUBTOTAL		12	12	29	348	377	29	360	389
** WEATHER **									
LOW CEILING	1	169	170		66	66	1	235	236
RAIN		49	49		40	40		89	89
FOG		122	122		56	56		178	178
SNOW		30	30		22	22		52	52
ICING CONDITIONS-INCLUDES SLEET, FREEZING RAIN, ETC	2	30	32	1	16	17	3	46	49
CONDITIONS CONDUCIVE TO CARB/INDUCTION SYSTEM ICING		5	5		53	53		58	58
UNFAVORABLE WIND CONDITIONS		15	15	18	245	263	18	260	278
WIND SHEAR		2	2	1	11	12	1	13	14
SUDDEN WINDSHIFT				7	15	22	7	15	22
TURBULENCE IN FLIGHT, CLEAR AIR		1	1		3	3		4	4
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS	1	19	20	2	3	5	3	22	25
DOWNDRAFTS, UPDRAFTS	1	8	9	4	56	60	5	64	69
LOCAL WHIRLWIND				5	3	8	5	3	8
TORNADO	1	2	3				1	2	3
SQUALL LINE		2	2		1	1		3	3
ADVERSE WINDS ALOFT					1	1		1	1
HIGH TEMPERATURE		2	2		3	3		5	5
OBSTRUCTIONS TO VISION		5	5		7	7		12	12
HIGH DENSITY ALTITUDE		16	16		65	65		81	81
THUNDERSTORM ACTIVITY		33	33	1	19	20	1	52	53
OTHER		4	4		5	5		9	9
SUBTOTAL	6	514	520	30	690	729	45	1204	1249
** TERRAIN **									
WET, SOFT GROUND		1	1	19	137	156	19	138	157
SNOW-COVERED		4	4	7	27	34	7	31	38
ICY					2	2		2	2
HIGH VEGETATION		1	1	11	62	73	11	63	74
HIDDEN OBSTRUCTIONS				4	17	22	5	17	22
ROUGH/UNEVEN		11	11	28	171	199	28	182	210
ROUGH WATER		1	1		5	5		6	6
GLASSY WATER					1	1		1	1
HIGH OBSTRUCTIONS	1	76	77	22	271	293	23	347	370
LOOSE GRAVEL					7	7		7	7
SANDY		3	3	3	13	16	3	13	16
OTHER				5	36	41	5	39	44
SUBTOTAL	1	97	98	100	749	849	101	846	947
** MISCELLANEOUS **									
FOREIGN OBJECT DAMAGE		1	1	3	2	5	3	2	5
SMOKE IN COCKPIT				4	7	11	4	8	12
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	6	1	7	1		1	1		1
UNDETERMINED	57		57	30	1	31	36	2	38
BIRD COLLISION				42		42	99		99
VORTEX TURBULENCE	3		3	2		2	2		2
PROP/JET/ROTOR BLAST				8	2	10	11	2	13
ANIMAL(S) ON RUNWAY/TAXIWAY/RAMP				4		4	4		4
EVASIVE MANEUVER TO AVOID COLLISION	4	1	5	10	2	12	10	2	12
UNQUALIFIED PERSON OPERATED AIRCRAFT	3	1	4	27	13	40	31	14	45
				8	6	14	11	7	18

BEST DOCUMENT AVAILABLE

MISCELLANEOUS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
DIRECT ENTRIES	2		2	5		5	7		7
SUBTOTAL	75	4	79	144	33	177	219	37	256
GRAND TOTAL	1080	855	1935	5070	2243	7313	6150	3098	9248
** MISCELLANEOUS ACTS, CONDITIONS **									
FIRE OF UNDETERMINED ORIGIN					6	6		6	6
UNAPPROVED MODIFICATION		1	1	2	1	3	2	2	4
IMPROPER/INADEQUATE VENTING				1		1	1		1
POOR WELD	1		1	6		6	7		7
PREVIOUS DAMAGE	1		1	4	1	5	5	1	6
BRAKES FROZEN				1	1	2	1	1	2
LEAK/LEAKAGE	2	3	5	27	1	28	29	4	33
LOW FLUID LEVEL				4	2	6	4	2	6
CIRCUIT BREAKER POPPED					6	6		6	6
ARCING	1		1	1		1	2		2
LOW COMPRESSION		1	1	5	1	6	5	2	7
RUNWAY CLOSED					6	6		6	6
DOWNWIND		4	4		69	69		73	73
CARBON DEPOSITS				5	2	7	5	2	7
LANDED IN CONSTRUCTION AREA					2	2		2	2
OVER TORQUED				1		1	1		1
UNDER TORQUED	1		1	1		1	2		2
LOOSE, PART/FITTING	2	1	3	23	4	27	25	5	30
GROUND RESONANCE				5	1	6	5	1	6
RENT				3	1	4	3	1	4
BINDING				8	3	11	8	3	11
BURST				3		3	3		3
BURNED					1	1		1	1
CHAFED		1	1	2		2	2	1	3
COLLAPSED	1		1	4		4	5		5
CROSSED	1		1				1		1
DETERIORATED				2		2	2		2
DISCONNECTED	2		2	29	1	30	31	1	32
DISTORTED				2		2	2		2
ELONGATED				2		2	2		2
EXCESSIVE-WEAR/PLAY		1	1	15	3	18	15	4	19
ERRATIC		2	2		16	16		18	18
FLUTTER	1		1	1		1	2		2
FRAYED				4		4	4		4
FRICTION, EXCESSIVE				1		1	1		1
GROUNDED				3	1	4	3	1	4
HIGH VOLTAGE BREAKDOWN				1		1	1		1
IMPROPERLY INSTALLED	5		5	17		17	22		22
JAMMED				9		9	9		9
OBSTRUCTED	2		2	26	2	28	28	2	30
OPEN				1	1	2	1	1	2
OUT OF BALANCE				1		1	1		1
OVERHEATED	2		2	7	1	8	9	1	10
PINCHED					1	1		1	1
EXCESSIVE PRESSURE				7	1	8	7	1	8
PRESSURE TOO LOW				9	2	11	9	2	11
PRESSURE, NONE				2		2	2		2
SCORED				2		2	2		2
SHEARED				3		3	3		3
STICKING				1		1	1		1
STRIPPED				2		2	2		2
STUCK				5	2	7	5	2	7
VIBRATION, EXCESSIVE				6	3	9	6	3	9
WARPED				3		3	3		3
CONGESTED RAMP/TAXIWAY					1	1		1	1
ICE-INDUCTION	1		1	3		3	4		4
FIRE IN WING				1		1	1		1
LOAD NOT JETTISONED				1	12	13	1	12	13
FAILED TO USE LANDING LIGHT(S)				1		1	1		1
INTENTIONAL GROUND-WATER LOOP-SWERVE				6	10	16	6	10	16
INTENTIONAL WHEELS UP		1	1	23	4	27	23	5	28
RAN OFF END OF RUNWAY		1	1		128	128		129	129
ALTIMETER SETTING-INCORRECT	1	1	2				1	1	2
ANTI-ICING/DEICING EQUIP-IMPROPER OPER, OF/FAILED TO USE	3	1	4	53	1	54	56	2	58
CHECKLIST-FAILED TO USE		1	1		7	7		8	8
CREW COORDINATION-POOR					3	3		3	3
DISREGARD OF GOOD OPERATING PRACTICE	3	1	4	5	4	9	8	5	13
IMPROPER EMERGENCY PROCEDURES	6		6	14	4	18	20	4	24

BEST DOCUMENT AVAILABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FEATHERED WRONG ENGINE				2		2	2		2
GUST LOCKS ENGAGED					2	2		2	2
INSTRUCTIONS-MISINTERPRETED				1		1	1		1
INSTRUMENTS-MISREAD OR FAILED TO READ				2	1	3	2	1	3
SEAT BELT NOT FASTENED		1	1	1		1	1	1	2
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA				14	24	38	14	24	38
UNWARRANTED LOW FLYING	22	36	58	14	13	27	36	49	85
FAILED TO EXTEND THE LANDING FLAPS	1		1		1	1	1	1	2
FAILED TO USE ALL AVAILABLE RUNWAY	1	1	2	4	4	8	5	5	10
LANDED AT WRONG AIRPORT					5	5		5	5
INATTENTIVE TO FUEL SUPPLY	1		1	37	4	41	38	4	42
FLEW INTO BLIND CANYON	7		7	8	1	9	15	1	16
PREMATURE FLAP RETRACTION					2	2		2	2
POORLY PLANNED APPROACH		2	2	1	15	16	1	17	18
MISCALCULATED FUEL CONSUMPTION	1		1	29	5	34	30	5	35
JETTISONED LOAD		1	1		12	12		13	13
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT		11	11		20	20		31	31
LANDED ON FOAMED RUNWAY					4	4		4	4
IMPROPERLY SECURED	1	1	2	14	2	16	15	3	18
COMMUNICATIONS FAILURE		1	1		1	1		2	2
ELECTRICAL FAILURE	1	1	2	2	9	11	4	10	13
ENGINE LOADED UP				15	2	17	15	2	17
EXPLOSIVE DECOMPRESSION					1	1		1	1
FATIGUE FRACTURE	12		12	26	1	27	38	1	39
FUEL GRADE-IMPROPER	1		1				1		1
HYDRAULIC FAILURE				5		5	5		5
IMPROPER GRADE OIL-LUBRICATING SYSTEM	1		1	2		2	3		3
RPM-UNCONTROLLABLE-OVERSPEED				1		1	1		1
WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION				2	11	13	2	11	13
WRONG PART	3		3	7		7	10		10
IMPROPER ALIGNMENT/ADJUSTMENT		1	1	23	11	34	23	12	35
FAILURE OF TWO OR MORE ENGINES		1	1	1	13	14	1	14	15
SEPARATION IN FLIGHT		33	33		11	11		44	44
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT		3	3	2	6	8	2	9	11
FIRE IN ENGINE	2	2	4	5	7	12	7	9	16
FIRE IN BRAKES/ WHEEL ASSEMBLY/ WHEEL WELL	1		1				1		1
CORRODED/CORROSION	2		2	10	1	11	12	1	13
INCORRECT TRIM SETTING	2	2	4	1	1	2	3	3	6
CARGO SHIFTED	2		2				2		2
PILOT FATIGUE	1	13	14		11	11	1	24	25
FUEL EXHAUSTION	10		10	208		208	218		218
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL	1	2	3	10	2	12	11	4	15
PILOT SUFFERED HEART ATTACK	2	1	3				2	1	3
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT	15	15	30	3	1	4	18	16	34
HYPOXIA	1		1				1		1
CARBON MONOXIDE POISONING		1	1					1	1
ICE-IN FUEL				6		6	6		6
ICE-ENGINE				1		1	1		1
ICE-CARBURETOR	2		2	52		52	54		54
AIRFRAME ICE	15	5	20	14	11	25	29	16	45
ICE-WINDSHIELD	1	2	3	1	6	7	2	8	10
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	7	14	21	10	11	21	17	25	42
INTERFERENCE WITH FLIGHT CONTROLS	1		1	12	2	14	13	2	15
WHITEOUT		1	1	1	5	6	1	6	7
SUNGLARE		7	7	1	23	24	1	30	31
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM	4		4	10	1	11	14	1	15
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM	2		2	24	1	25	26	1	27
OIL CONTAMINATION				2		2	2		2
SIMULATED CONDITIONS		2	2		28	28		30	30
FUEL SIPHONING				2		2	2		2
WATER IN FUEL	7	1	8	52	2	54	59	3	62
AIRCRAFT CAME TO REST IN WATER		44	44		84	84		128	128
FROZEN, MOISTURE		1	1	1	1	2	1	2	3
MISSING		1	1	18	2	20	18	3	21
TOUCH AND GO LANDING		8	8		87	87		95	95
HYDROPLANING ON WET RUNWAY				2	8	10	2	8	10
OVERLOAD FAILURE	5	14	19	8	326	334	13	340	353
MATERIAL FAILURE	17		17	191	12	203	208	12	220
FUEL STARVATION	11		11	110		110	121		121
OIL STARVATION				3		3	3		3
IMPROPER CLEARANCE-TOLERANCE	1		1	1		1	2		2
FUEL SELECTOR POSITIONED BETWEEN TANKS				6	1	7	6	1	7

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
DIRECT ENTRY CAUSES									
PILOT-FAILED TO MAINTAIN ADEQUATE SEPARATION									
PILOT-FAILED TO MAINTAIN ADEQUATE SEPARATION									
MISC-SPIN CHUTE FAILED TO RELEASE									
PILOT-IMPROPER LANDING TECHNIQUE									
MISC-TOW RELEASED ON TKOF FOR UNDET REASON.									
MISC-FUEL STARVATION FOR UNDETERMINED REASON.									
PILOT-FAILED TO MAINTAIN ADEQUATE SEPARATION									
MISC-ACCIDENTAL FIRING OF FLARE PISTOL IN FLT.									
PILOT-FAILED TO MAINTAIN POSITIVE RATE OF CLIMB									
MISC-COLLIDED WITH RADIO CONTROLLED MODEL ACFT									
PILOT-FAILED TO MAINTAIN POSITIVE RATE OF CLIMB									
PERSONNEL-ACFT TIED DWN W/CHAINS ORG WND GSTNG 75K									
MISC-FUEL EXHAUSTION FOR UNDETERMINED REASON									
MISC-FUEL STARVATION FOR UNDTRMD RSN.									

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

INSTRUCTIONAL

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 515 TOTAL ACCIDENTS

INVOLVES 41 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	33 80.49	8 19.51	34 82.93	410 86.50	45 9.49	416 87.76	443 86.02	53 10.29	450 87.38
PERSONNEL	8 19.51	3 7.32	11 26.83	26 5.49	8 1.69	34 7.17	34 6.60	11 2.14	45 8.74
AIRFRAME	1 2.44	.00	1 2.44	1 .21	1 .21	2 .42	2 .39	1 .19	3 .58
LANDING GEAR	.00	.00	.00	10 2.11	4 .84	14 2.95	10 1.94	4 .78	14 2.72
POWERPLANT	4 9.76	.00	4 9.76	53 11.18	4 .84	57 12.03	57 11.07	4 .78	61 11.84
SYSTEMS	.00	.00	.00	4 .84	2 .42	6 1.27	4 .78	2 .39	6 1.17
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	.00	.00	.00	4 .84	.00	4 .84	4 .78	.00	4 .78
AIRPORT/AIRWAYS/FACILITIES	.00	.00	.00	4 .84	37 7.81	41 8.65	4 .78	37 7.18	41 7.96
WEATHER	.00	5 12.20	5 12.20	1 .21	69 14.56	70 14.77	1 .19	74 14.37	75 14.56
TERRAIN	.00	2 4.88	2 4.88	9 1.90	76 16.03	85 17.93	9 1.75	78 15.15	87 16.89
MISCELLANEOUS	.00	.00	.00	9 1.90	.00	9 1.90	9 1.75	.00	9 1.75
UNDETERMINED	3 7.32	.00	3 7.32	.00	.00	.00	3 .58	.00	3 .58

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

PLEASURE

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 2066 TOTAL ACCIDENTS

INVOLVES 397 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	335 84.38	79 19.90	336 84.63	1357 81.31	132 7.91	1368 81.97	1692 81.90	211 10.21	1704 82.48
PERSONNEL	29 7.30	9 2.27	37 9.32	112 6.71	15 .90	127 7.61	141 6.82	24 1.16	164 7.94
AIRFRAME	6 1.51	13 3.27	18 4.53	10 .60	4 .24	14 .84	16 .77	17 .82	32 1.55
LANDING GEAR	 .00	 .00	 .00	53 3.18	10 .60	63 3.77	53 2.57	10 .48	63 3.05
POWERPLANT	28 7.05	2 .50	30 7.56	242 14.50	17 1.02	255 15.28	270 13.07	19 .92	285 13.79
SYSTEMS	4 1.01	1 .25	5 1.26	21 1.26	8 .48	29 1.74	25 1.21	9 .44	34 1.65
INSTRUMENTS/EQUIPMENT & ACCESSORIES	 .00	2 .50	2 .50	3 .18	4 .24	7 .42	3 .15	6 .29	9 .44
ROTORCRAFT	3 .76	 .00	3 .76	2 .12	 .00	2 .12	5 .24	 .00	5 .24
AIRPORT/AIRWAYS/FACILITIES	 .00	5 1.26	5 1.26	13 .78	146 8.75	159 9.53	13 .63	151 7.31	164 7.94
WEATHER	2 .50	177 44.58	178 44.84	24 1.44	314 18.81	334 20.01	26 1.26	491 23.77	512 24.78
TERRAIN	 .00	53 13.35	53 13.35	51 3.06	381 22.83	430 25.76	51 2.47	434 21.01	483 23.38
MISCELLANEOUS	11 2.77	1 .25	12 3.02	48 2.88	19 1.14	65 3.89	59 2.86	20 .97	77 3.73
UNDETERMINED	34 8.56	 .00	34 8.56	19 1.14	 .00	19 1.14	53 2.57	 .00	53 2.57

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BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

BUSINESS

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 251 TOTAL ACCIDENTS

INVOLVES 65 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	60 90.91	12 21.82	61 92.74	141 71.94	18 9.18	142 72.45	181 78.10	30 11.95	193 76.89
PERSONNEL	4 7.27	4 7.27	8 14.55	16 8.16	2 1.02	18 9.18	20 7.97	6 2.39	26 10.36
AIRFRAME	1 1.82	.00	1 1.82	1 .51	.00	1 .51	2 .80	.00	2 .80
LANDING GEAR	.00	.00	.00	16 8.16	1 .51	17 8.67	16 6.37	1 .40	17 6.77
POWERPLANT	5 9.09	1 1.82	5 9.09	31 15.82	1 .51	32 16.33	36 14.34	2 .80	37 14.74
SYSTEMS	1 1.82	.00	1 1.82	5 2.55	1 .51	6 3.06	6 2.39	1 .40	7 2.79
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	.00	1 .51	1 .51	.00	1 .40	1 .40
ROTORCRAFT	.00	.00	.00	3 1.53	.00	3 1.53	3 1.20	.00	3 1.20
AIRPORT/AIRWAYS/FACILITIES	.00	1 1.82	1 1.82	2 1.02	24 12.24	26 13.27	2 .80	25 9.96	27 10.76
WEATHER	2 3.64	36 65.45	36 65.45	3 1.53	34 17.35	37 18.88	5 1.99	70 27.89	74 29.48
TERRAIN	.00	8 14.55	8 14.55	5 2.55	39 19.90	44 22.45	5 1.99	47 18.73	52 20.72
MISCELLANEOUS	1 1.82	1 1.82	2 3.64	6 3.06	2 1.02	8 4.08	7 2.79	3 1.20	10 3.98
UNDETERMINED	2 3.64	.00	2 3.64	3 1.53	.00	3 1.53	5 1.99	.00	5 1.99

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BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

CORPORATE/EXECUTIVE

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 83 TOTAL ACCIDENTS

INVOLVES 14 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	13 92.86	2 14.29	13 92.86	50 72.46	5 7.25	50 72.46	63 75.90	7 8.43	63 75.90
PERSONNEL	1 7.14	1 7.14	2 14.29	5 7.25	 .00	5 7.25	6 7.23	1 1.20	7 8.43
AIRFRAME	.00	.00	.00	.00	.00	.00	.00	.00	.00
LANDING GEAR	.00	.00	.00	4 5.80	.00	4 5.80	4 4.82	.00	4 4.82
POWERPLANT	3 21.43	.00	3 21.43	8 11.59	.00	8 11.59	11 13.25	.00	11 13.25
SYSTEMS	.00	.00	.00	.00	1 1.45	1 1.45	.00	1 1.20	1 1.20
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	.00	.00	.00	4 5.80	.00	4 5.80	4 4.82	.00	4 4.82
AIRPORT/AIRWAYS/FACILITIES	.00	1 7.14	1 7.14	1 1.45	12 17.39	13 18.84	1 1.20	13 15.66	14 16.87
WEATHER	.00	8 57.14	8 57.14	1 1.45	12 17.39	13 18.84	1 1.20	20 24.10	21 25.30
TERRAIN	.00	2 14.29	2 14.29	.00	6 8.70	6 8.70	.00	8 9.64	8 9.64
MISCELLANEOUS	.00	.00	.00	1 1.45	1 1.45	2 2.90	1 1.20	1 1.20	2 2.41
UNDETERMINED	.00	.00	.00	2 2.90	.00	2 2.90	2 2.41	.00	2 2.41

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BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

AERIAL APPLICATION AND FIRE CONTROL(INCLUDES ASSOCIATED ACTIVITIES)

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 395 TOTAL ACCIDENTS

INVOLVES 27 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	23 85.19	1 3.70	23 85.19	260 70.65	16 4.35	263 71.47	283 71.65	17 4.30	286 72.41
PERSONNEL	2 7.41	 .00	2 7.41	22 5.98	3 .82	25 6.79	24 6.08	3 .76	27 6.84
AIRFRAME	 .00	 .00	 .00	 .00	1 .27	1 .27	 .00	1 .25	1 .25
LANDING GEAR	 .00	 .00	 .00	12 3.26	1 .27	13 3.53	12 3.04	1 .25	13 3.29
POWERPLANT	 .00	 .00	 .00	75 20.38	5 1.36	80 21.74	75 18.99	5 1.27	80 20.25
SYSTEMS	 .00	 .00	 .00	2 .54	 .00	2 .54	2 .51	 .00	2 .51
INSTRUMENTS/EQUIPMENT & ACCESSORIES	 .00	 .00	 .00	1 .27	 .00	1 .27	1 .25	 .00	1 .25
ROTORCRAFT	2 7.41	 .00	2 7.41	13 3.53	 .00	13 3.53	15 3.80	 .00	15 3.80
AIRPORT/AIRWAYS/FACILITIES	 .00	 .00	 .00	2 .54	16 4.35	18 4.89	2 .51	16 4.05	18 4.56
WEATHER	 .00	1 3.70	1 3.70	2 .54	38 10.33	39 10.60	2 .51	39 9.87	40 10.13
TERRAIN	 .00	7 25.93	7 25.93	18 4.89	95 25.82	113 30.71	18 4.56	102 25.82	120 30.38
MISCELLANEOUS	 .00	 .00	 .00	13 3.53	4 1.09	17 4.62	13 3.29	4 1.01	17 4.30
UNDETERMINED	3 11.11	 .00	3 11.11	4 1.09	 .00	4 1.09	7 1.77	 .00	7 1.77

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

AIR TAXI
ALL OPERATIONS

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 223 TOTAL ACCIDENTS

INVOLVES 49 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	38 77.55	13 26.53	42 85.71	119 68.39	17 9.77	121 69.54	157 70.40	30 13.45	163 73.09
PERSONNEL	5 10.20	10 20.41	14 28.57	33 18.97	7 4.02	39 22.41	38 17.04	17 7.62	53 23.77
AIRFRAME	 .00	 .00	 .00	2 1.15	3 1.72	5 2.87	2 .90	3 1.35	5 2.24
LANDING GEAR	 .00	 .00	 .00	14 8.05	 .00	14 8.05	14 6.28	 .00	14 6.28
POWERPLANT	5 10.20	1 2.04	6 12.24	32 18.39	5 2.87	33 18.97	37 16.59	6 2.69	39 17.49
SYSTEMS	1 2.04	1 2.04	2 4.08	2 1.15	1 .57	3 1.72	3 1.35	2 .90	5 2.24
INSTRUMENTS/EQUIPMENT & ACCESSORIES	1 2.04	 .00	1 2.04	 .00	 .00	 .00	1 .45	 .00	1 .45
ROTORCRAFT	2 4.08	 .00	2 4.08	2 1.15	 .00	2 1.15	4 1.79	 .00	4 1.79
AIRPORT/AIRWAYS/FACILITIES	 .00	2 4.08	2 4.08	1 .57	31 17.82	32 18.39	1 .45	33 14.80	34 15.25
WEATHER	1 2.04	23 46.94	23 46.94	2 1.15	38 21.84	40 22.99	3 1.35	61 27.35	63 28.25
TERRAIN	 .00	9 18.37	9 18.37	3 1.72	24 13.79	27 15.52	3 1.35	33 14.80	36 16.14
MISCELLANEOUS	1 2.04	 .00	1 2.04	7 4.02	 .00	7 4.02	8 3.59	 .00	8 3.59
UNDETERMINED	4 8.16	 .00	4 8.16	2 1.15	 .00	2 1.15	6 2.69	 .00	6 2.69

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BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL							
DUAL	20	18	27	141	206	205	5.07
SOLO	6	10	15	143	174	173	4.28
CHECK	4	2	4	9	19	19	.47
TRAINING	12	9	18	81	120	119	2.95
NONCOMMERCIAL							
PLEASURE	399	212	338	1125	2074	2066	51.07
PRACTICE	19	9	14	98	140	140	3.45
BUSINESS	55	22	25	150	252	251	6.21
CORPORATE/EXECUTIVE	15	5	10	54	84	84	2.07
AERIAL SURVEY	3	2		9	14	14	.34
COMPANY FLIGHT							
OTHER	2		2	7	11	11	.27
COMMERCIAL							
AERIAL APPLICATION	17	40	52	105	214	214	5.27
CROP CONTROL RELATED FLIGHT	9	12	23	134	178	178	4.38
FIRE CONTROL		1			1	1	.02
FIRE CONTROL RELATED FLIGHT	1			1	2	2	.05
AERIAL MAPPING/PHOTOGRAPHY	5		1	5	11	11	.27
AERIAL ADVERTISING	2	3	2	7	14	14	.34
POWER AND PIPELINE PATROL	2	1	1	4	8	8	.20
FISH SPOTTING				5	5	5	.12
AIR TAXI-PASSENGER OPERATIONS	36	19	19	72	146	146	3.60
AIR TAXI-CARGO OPERATIONS	13	8	12	45	78	77	1.92
CONSTRUCTION WORK	2		1	3	6	6	.15
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE	1				1	1	.02
INTRA-STATE CHARTER PASSG.	2	1	1	1	5	5	.12
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC		1	2	1	4	4	.10
CHARTER PASSG-DOMESTIC	2	1	1	1	5	5	.12
CHARTER-CARGO-INTERNATIONAL				1	1	1	.02
CHARTER-PASSG-INTERNATIONAL							
OTHER	3	2	6	12	23	23	.57
UNKNOWN/NOT REPORTED				1	1	1	.02

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

MISCELLANEOUS	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EXPERIMENTATION		2	1		3	3	.07
TEST	9	6	8	30	53	52	1.31
DEMONSTRATION	2	1	3	10	16	16	.39
FERRY	15	3	10	61	89	88	2.19
SEARCH AND RESCUE	2	1		4	7	7	.17
AIR SHOW/AIR RACING	1	1			2	2	.05
PARACHUTE JUMP	1		3	6	10	10	.25
PARACHUTE JUMP-AIR SHOW	1				1	1	.02
TOWING GLIDERS				6	6	6	.15
SEEDING CLOUDS				1	1	1	.02
HUNTING	2	2	1	2	7	7	.17
POLICE PATROL	1			2	3	3	.07
HIGHWAY TRAFFIC ADVISORY		1	1		2	2	.05
ALL OTHER PUBLIC FLYING	3			1	4	4	.10
OTHER	13	2	4	19	38	38	.94
UNKNOWN/NOT REPORTED	12			10	22	22	.54
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

KIND OF FLYING BY AIRCRAFT DAMAGE
ALL OPERATIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL							
DUAL	37	166	1	2	206	205	5.07
SOLO	22	151	1		174	173	4.28
CHECK	3	15	1		19	19	.47
TRAINING	21	97	1	1	120	119	2.95
NONCOMMERCIAL							
PLEASURE	540	1501	15	18	2074	2066	51.07
PRACTICE	27	112	1		140	140	3.45
BUSINESS	73	177	2		252	251	6.21
CORPORATE/EXECUTIVE	20	64			84	84	2.07
AERIAL SURVEY	4	10			14	14	.34
COMPANY FLIGHT							
OTHER	4	7			11	11	.27
COMMERCIAL							
AERIAL APPLICATION	86	126	2		214	214	5.27
CROP CONTROL RELATED FLIGHT	34	144			178	178	4.38
FIRE CONTROL		1			1	1	.02
FIRE CONTROL RELATED FLIGHT		2			2	2	.05
AERIAL MAPPING/PHOTOGRAPHY	5	6			11	11	.27
AERIAL ADVERTISING	5	8	1		14	14	.34
POWER AND PIPELINE PATROL	3	5			8	8	.20
FISH SPOTTING	3	2			5	5	.12
AIR TAXI-PASSENGER OPERATIONS	45	99		2	146	144	3.60
AIR TAXI-CARGO OPERATIONS	21	56	1		78	77	1.92
CONSTRUCTION WORK	2	4			6	6	.15
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE	1				1	1	.02
INTRA-STATE CHARTER PASSG.	2	3			5	5	.12
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC	1	3			4	4	.10
CHARTER PASSG-DOMESTIC	3	2			5	5	.12
CHARTER-CARGO-INTERNATIONAL		1			1	1	.02
CHARTER-PASSG-INTERNATIONAL							
OTHER	9	14			23	23	.57
UNKNOWN/NOT REPORTED		1			1	1	.02

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

MISCELLANEOUS	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EXPERIMENTATION	1	2			3	3	.07
TEST	11	40	2		53	52	1.31
DEMONSTRATION	3	13			16	16	.39
FERRY	20	69			89	88	2.19
SEARCH AND RESCUE	3	4			7	7	.17
AIR SHOW/AIR RACING	2				2	2	.05
PARACHUTE JUMP		9	1		10	10	.25
PARACHUTE JUMP-AIR SHOW	1				1	1	.02
TOWING GLIDERS	1	5			6	6	.15
SEEDING CLOUDS		1			1	1	.02
HUNTING	2	5			7	7	.17
POLICE PATROL	2	1			3	3	.07
HIGHWAY TRAFFIC ADVISORY		2			2	2	.05
ALL OTHER PUBLIC FLYING	3	1			4	4	.10
OTHER	19	19			38	38	.94
UNKNOWN/NOT REPORTED	15	7			22	22	.54
RECORDS	1054	2955	29	23	4061		
ACCIDENTS	1051	2940	29	23		4023	
PERCENTS	26.0	72.8	.7	.6			

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
U.S.GENERAL AVIATION
ALL OPERATIONS
1979

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	627	368	546	2520		4061
COPILOT	51	9	10	79		149
DUAL STUDENT	16	19	32	151		218
CHECK PILOT	1	4	3	11		19
FLIGHT ENGINEER			1	3		4
NAVIGATOR						
CABIN ATTENDANT				3		3
EXTRA CREW	5	2	6	7		20
PASSENGERS	653	287	456	2113		3509
TOTAL	1353	689	1054	4887	ABOARD	7983
* OTHER AIRCRAFT	4			3		7
OTHER GROUND	10	11	23	11		55
GRAND TOTAL	1367	700	1077	4901		8045

INVOLVES 4023 TOTAL ACCIDENTS
INVOLVES 678 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
INSTRUCTIONAL
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	37	32	61	389		519
COPILOT	1	2	2	5		10
DUAL STUDENT	12	17	31	148		208
CHECK PILOT		4	3	10		17
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	4	2	4	34		44
TOTAL	54	57	101	586	ABOARD	798
* OTHER AIRCRAFT	7	1	1	15		24
OTHER GROUND	1	2	1			4
GRAND TOTAL	62	60	103	601		826

INVOLVES 515 TOTAL ACCIDENTS
INVOLVES 41 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
INSTRUCTIONAL(DUAL)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	18	14	24	150		206
COPILOT		1	1	2		4
DUAL STUDENT	12	16	28	143		199
CHECK PILOT				1		1
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	3	1	1	26		31
TOTAL	33	32	54	322	ABOARD	441
* OTHER AIRCRAFT			1	12		13
OTHER GROUND		1	1			2
GRAND TOTAL	33	33	56	334		456

INVOLVES 205 TOTAL ACCIDENTS
INVOLVES 19 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
INSTRUCTIONAL(SOLO-SUPERVISED)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	6	10	13	145		174
COPILOT						
DUAL STUDENT			1			1
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				1		1
TOTAL	6	10	14	146	ABOARD	176
* OTHER AIRCRAFT	4	1		4		9
OTHER GROUND						
GRAND TOTAL	10	11	14	150		185

INVOLVES 173 TOTAL ACCIDENTS
INVOLVES 6 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
INSTRUCTIONAL(CHECK)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	2	1	5	11		19
COPILOT	1		1	1		3
DUAL STUDENT				1		1
CHECK PILOT		3	3	9		15
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				1		1
TOTAL	3	4	9	23	ABOARD	39
* OTHER AIRCRAFT	3					3
OTHER GROUND						
GRAND TOTAL	6	4	9	23		42

INVOLVES 19 TOTAL ACCIDENTS
INVOLVES 4 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES,ACCIDENTS
INSTRUCTIONAL(TRAINING)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	11	7	19	83		120
COPILOT		1		2		3
DUAL STUDENT		1	2	4		7
CHECK PILOT		1				1
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	1	1	3	6		11
TOTAL	12	11	24	95	ABOARD	142
* OTHER AIRCRAFT				2		2
OTHER GROUND	1	1				2
GRAND TOTAL	13	12	24	97		146

INVOLVES 119 TOTAL ACCIDENTS
INVOLVES 12 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
NONCOMMERCIAL(PLEASURE/PERSONAL TRANSPORTATION)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	362	200	298	1214		2074
COPILOT	19	2	3	19		43
DUAL STUDENT	2			2		4
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW	1		2	1		4
PASSENGERS	408	190	334	1402		2334
TOTAL	792	392	637	2638	ABOARD	4459
* OTHER AIRCRAFT	5	1	1	15		22
OTHER GROUND	6	3	10	4		23
GRAND TOTAL	803	396	648	2657		4504

INVOLVES 2066 TOTAL ACCIDENTS
INVOLVES 397 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
NONCOMMERCIAL(PRACTICE)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	17	9	13	101		140
COPILOT	1		1	1		3
DUAL STUDENT	2					2
CHECK PILOT				1		1
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW				1		1
PASSENGERS	4	6		25		35
TOTAL	24	15	14	129	ABOARD	182
* OTHER AIRCRAFT	2			2		4
OTHER GROUND		1				1
GRAND TOTAL	26	16	14	131		187

INVOLVES 140 TOTAL ACCIDENTS
INVOLVES 19 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
ALL OPERATIONS
NONCOMMERCIAL(BUSINESS-NONPROFESSIONAL PILOT)

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	52	21	23	156		252
COPILOT	4		1	3		8
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW		1		2		3
PASSENGERS	51	17	27	157		252
TOTAL	107	39	51	318	ABOARD	515
* OTHER AIRCRAFT	2		2	2		6
OTHER GROUND			5	3		8
GRAND TOTAL	109	39	58	323		529

INVOLVES 251 TOTAL ACCIDENTS
INVOLVES 55 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
NONCOMMERCIAL(CORPORATE/EXECUTIVE-PROFESSIONAL PILOT)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	14	5	9	56		84
COPILOT	4			10		14
DUAL STUDENT		1				1
CHECK PILOT						
FLIGHT ENGINEER				1		1
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	33	5	7	94		139
TOTAL	51	11	16	161	ABOARD	239
* OTHER AIRCRAFT	6			1		7
OTHER GROUND						
GRAND TOTAL	57	11	16	162		246

INVOLVES 84 TOTAL ACCIDENTS
INVOLVES 15 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
NONCOMMERCIAL(AERIAL SURVEY)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	2	3		9		14
COPILOT				1		1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	7	3		9		19
TOTAL	9	6		19	ABOARD	34
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	9	6		19		34

INVOLVES 14 TOTAL ACCIDENTS
INVOLVES 3 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES•ACCIDENTS
NONCOMMERCIAL(OTHER)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	2		1	8		11
COPILOT				1		1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	3		1	6		10
TOTAL	5		2	15	ABOARD	22
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	5		2	15		22

INVOLVES 11 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COMMERCIAL(AERIAL APPLICATION-CROP CONTROL)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	16	38	52	108		214
COPILOT				2		2
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS						
TOTAL	16	38	52	110	ABOARD	216
OTHER AIRCRAFT						
OTHER GROUND	1	2				3
GRAND TOTAL	17	40	52	110		219

INVOLVES 214 TOTAL ACCIDENTS
INVOLVES 17 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES, ACCIDENTS
COMMERCIAL(ASSOCIATED CROP CONTROL-TO OR FROM)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	9	12	22	135		178
COPILOT				1		1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				2		2
TOTAL	9	12	22	138	ABOARD	181
* OTHER AIRCRAFT				2		2
OTHER GROUND			1			1
GRAND TOTAL	9	12	23	140		184

INVOLVES 178 TOTAL ACCIDENTS
INVOLVES 9 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COMMERCIAL(FIRE CONTROL)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT			1			1
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS		1	1			2
TOTAL		1	2		ABOARD	3
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL		1	2			3

INVOLVES 1 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES, ACCIDENTS
COMMERCIAL (ASSOCIATED FIRE CONTROL-TO OR FROM)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT				2		2
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS						
TOTAL				2	ABOARD	2
* OTHER AIRCRAFT	1					1
OTHER GROUND						
GRAND TOTAL	1			2		3

INVOLVES 2 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COMMERCIAL(AERIAL MAPPING/PHOTOGRAPHY)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	3	1	2	5		11
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	8	1	1	6		16
TOTAL	11	2	3	11	ABOARD	27
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	11	2	3	11		27

INVOLVES 11 TOTAL ACCIDENTS
INVOLVES 5 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COMMERCIAL(AERIAL ADVERTISING)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	2	3	2	7		14
COPILOT			1			1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	1		2			3
TOTAL	3	3	5	7	ABOARD	18
* OTHER AIRCRAFT				3		3
OTHER GROUND						
GRAND TOTAL	3	3	5	10		21

INVOLVES 14 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COMMERCIAL(POWER AND PIPELINE PATROL)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	2	1		5		8
COPILOT	1					1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS		1	1	4		6
TOTAL	3	2	1	9	ABOARD	15
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	3	2	1	9		15

INVOLVES 8 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES•ACCIDENTS
COMMERCIAL(FISH SPOTTING)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT				5		5
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				1		1
TOTAL				6	ABOARD	6
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL				6		6

INVOLVES 5 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES,ACCIDENTS
COMMERCIAL(AIR TAXI)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	43	20	26	135		224
COPILOT	10	4	1	24		39
DUAL STUDENT			1			1
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT				3		3
EXTRA CREW	1	1	2	2		6
PASSENGERS	90	45	59	284		478
TOTAL	144	70	89	448	ABOARD	751
* OTHER AIRCRAFT	3			6		9
OTHER GROUND	1	3	3	4		11
GRAND TOTAL	148	73	92	458		771

INVOLVES 223 TOTAL ACCIDENTS
INVOLVES 49 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COMMERCIAL(AIR TAXI-PASSENGER)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	31	13	14	88		146
COPILOT	5	1	1	13		20
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT				3		3
EXTRA CREW			1			1
PASSENGERS	89	44	58	279		470
TOTAL	125	58	74	383	ABOARD	640
* OTHER AIRCRAFT	3			2		5
OTHER GROUND		1	1	1		3
GRAND TOTAL	128	59	75	386		648

INVOLVES 146 TOTAL ACCIDENTS
INVOLVES 36 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COMMERCIAL(AIR TAXI-CARGO)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	12	7	12	47		78
COPILOT	5	3		11		19
DUAL STUDENT			1			1
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW	1	1	1	2		5
PASSENGERS	1	1	1	5		8
TOTAL	19	12	15	65	ABOARD	111
* OTHER AIRCRAFT				4		4
OTHER GROUND	1	2	2	3		8
GRAND TOTAL	20	14	17	72		123

INVOLVES 77 TOTAL ACCIDENTS
INVOLVES 13 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES,ACCIDENTS
COMMERCIAL(CONSTRUCTION-ROTORCRAFT)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	2			4		6
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	1		1	2		4
TOTAL	3		1	6	ABOARD	10
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	3		1	6		10

INVOLVES 6 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COMMERCIAL(SCHEDULED PASSENGER-INTRASTATE CARRIER)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT						
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS						
TOTAL						ABOARD
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL						

INVOLVES TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COMMERCIAL(SCHEDULED CARGO-INTRASTATE CARRIER)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	1					1
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	1					1
TOTAL	2				ABOARD	2
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	2					2

INVOLVES 1 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES,ACCIDENTS
COMMERCIAL(OTHER)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	7	5	8	19		39
COPILOT	1		1	2		4
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER				1		1
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW	1		1	1		3
PASSENGERS	18	4	2	15		39
TOTAL	27	9	12	38	ABOARD	86
OTHER AIRCRAFT						
OTHER GROUND			1			1
GRAND TOTAL	27	9	13	38		87

INVOLVES 39 TOTAL ACCIDENTS
INVOLVES 7 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
MISCELLANEOUS(EXPERIMENTATION)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT		2		1		3
COPILOT				1		1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER			1	1		2
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS						
TOTAL		2	1	3	ABOARD	6
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL		2	1	3		6

INVOLVES 3 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
MISCELLANEOUS(TEST)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	7	4	8	34		53
COPILOT		1		3		4
DUAL STUDENT						
CHECK PILOT	1					1
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	2	-	3	9		14
TOTAL	10	5	11	46	ABOARD	72
* OTHER AIRCRAFT		3		1		4
OTHER GROUND	1		1			2
GRAND TOTAL	11	8	12	47		78

INVOLVES 52 TOTAL ACCIDENTS
INVOLVES 9 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
MISCELLANEOUS(DEMONSTRATION)
ALL OPERATIONS

	INJURIES						
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN		TOTAL
PILOT	2	1	2	11			16
COPILOT							
DUAL STUDENT				1			1
CHECK PILOT							
FLIGHT ENGINEER							
NAVIGATOR							
CABIN ATTENDANT							
EXTRA CREW							
PASSENGERS			5	11			16
TOTAL	2	1	7	23		ABOARD	33
OTHER AIRCRAFT							
OTHER GROUND							
GRAND TOTAL	2	1	7	23			33

INVOLVES 16 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES,ACCIDENTS
MISCELLANEOUS(FERRY)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	14	3	10	62		89
COPILOT	1			4		5
DUAL STUDENT		1				1
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	5	3	2	20		30
TOTAL	20	7	12	86	ABOARD	125
* OTHER AIRCRAFT				1		1
OTHER GROUND						
GRAND TOTAL	20	7	12	87		126

INVOLVES 88 TOTAL ACCIDENTS
INVOLVES 14 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES,ACCIDENTS
MISCELLANEOUS(SEARCH AND RESCUE)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	2	1		4		7
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	2	2	1	6		11
TOTAL	4	3	1	10	ABOARD	18
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	4	3	1	10		18

INVOLVES 7 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES,ACCIDENTS
MISCELLANEOUS(AIR SHOW/RACING)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	1	1				2
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS						
TOTAL	1	1			ABOARD	2
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	1	1				2

INVOLVES 2 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
MISCELLANEOUS(PARACHUTE JUMP-SPORTING)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT			4	6		10
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW			1			1
PASSENGERS				5		5
TOTAL			5	11	ABOARD	16
* OTHER AIRCRAFT	2					2
OTHER GROUND						
GRAND TOTAL	2		5	11		18

INVOLVES 10 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES,ACCIDENTS
MISCELLANEOUS(PARACHUTE JUMP-AIR SHOW)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	1					1
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS						
TOTAL	1				ABOARD	1
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	1					1

INVOLVES 1 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES,ACCIDENTS
MISCELLANEOUS(TOWING GLIDERS)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT				6		6
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				2		2
TOTAL				8	ABOARD	8
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL				8		8

INVOLVES 6 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
MISCELLANEOUS(SEEDING CLOUDS)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT				1		1
COPILOT				1		1
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS						
TOTAL				2	ABOARD	2
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL				2		2

INVOLVES 1 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
MISCELLANEOUS(HUNTING)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	2	2	1	2		7
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	1	1	2	4		8
TOTAL	3	3	3	6	ABOARD	15
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	3	3	3	6		15

INVOLVES 7 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
MISCELLANEOUS(POLICE PATROL INCLUDES TRAFFIC ADVISORY)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	1			2		3
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW	1					1
PASSENGERS				1		1
TOTAL	2			3	ABOARD	5
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	2			3		5

INVOLVES 3 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
MISCELLANEOUS(HIGHWAY TRAFFIC ADVISORY NON POLICE)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT		1		1		2
COPILOT						
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS		1	1			2
TOTAL		2	1	1	ABOARD	4
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL		2	1	1		4

INVOLVES 2 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES•ACCIDENTS
MISCELLANEOUS(OTHER)
ALL OPERATIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	25	3	3	32		63
COPILOT	9			1		10
DUAL STUDENT						
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW	1					1
PASSENGERS	14	5	2	14		35
TOTAL	49	8	5	47	ABOARD	109
OTHER AIRCRAFT						
OTHER GROUND	1		1			2
GRAND TOTAL	50	8	6	47		111

INVOLVES 64 TOTAL ACCIDENTS
INVOLVES 28 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

SELECTED ACCIDENT DATA

ALL OPERATIONS

1979

Pilot Total Time	Accident Records Total	Fatal
0- 25 Hours	131	13
26- 50 Hours	184	16
51- 100 Hours	253	33
101- 300 Hours	680	125
301- 500 Hours	376	62
501- 1000 Hours	525	85
1001- 3000 Hours	895	145
3001- 5000 Hours	336	57
5001- 8000 Hours	256	51
8001-10,000 Hours	105	18
over-10,000 Hours	205	41
Unknown/not reported	115	46
Pilot Time In Type Aircraft		
5- Or less Hours	247	32
6- 25 Hours	645	70
26- 50 Hours	476	59
51- 100 Hours	523	64
101- 300 Hours	797	127
301- 500 Hours	311	35
501- 1000 Hours	362	55
1001- 2000 Hours	205	20
2001- 3000 Hours	68	5
over- 3000 Hours	101	13
Unknown/not reported	326	202

ANALYTIC TABLE

PILOT AGE BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
15		1			1	1	.02
16	4			3	7	7	.17
17	1	2	2	10	15	15	.37
18	4	3	4	18	29	28	.71
19	6	2	11	18	37	37	.91
20	11	7	5	33	56	56	1.38
21	9	8	2	41	60	60	1.48
22	10	7	13	52	82	82	2.02
23	14	10	12	66	102	102	2.51
24	11	8	12	54	85	85	2.09
25	11	7	23	55	96	96	2.36
26	12	9	13	75	109	109	2.68
27	23	10	13	85	131	131	3.23
28	23	11	16	77	127	127	3.13
29	22	7	26	76	131	131	3.23
30	10	14	20	102	146	146	3.60
31	22	10	19	75	126	126	3.10
32	20	17	23	96	156	156	3.84
33	17	13	24	82	136	136	3.35
34	8	9	13	58	88	88	2.17
35	23	14	16	75	128	128	3.15
36	26	22	16	74	138	138	3.40
37	22	9	11	58	100	100	2.46
38	17	13	10	57	97	97	2.39
39	19	9	16	64	108	108	2.66
40	13	16	16	60	105	105	2.59
41	15	7	12	47	81	81	1.99
42	14	10	17	52	93	93	2.29
43	15	6	11	45	77	77	1.90
44	16	7	17	47	87	87	2.14
45	15	5	12	52	84	84	2.07
46	18	11	13	54	96	96	2.36
47	14	6	20	44	84	84	2.07
48	14	12	20	47	93	93	2.29
49	20	7	17	52	96	95	2.36
50	20	11	11	40	82	82	2.02
51	20	7	12	38	77	77	1.90

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
52	12	10	19	29	70	70	1.72
53	12	3	12	32	59	59	1.45
54	22	8	5	37	72	72	1.77
55	19	2	6	31	58	58	1.43
56	15	9	6	32	62	62	1.53
57	8	6	5	39	58	58	1.43
58	4	4	6	23	37	37	.91
59	13	6	4	25	48	48	1.18
60	9	2	6	19	36	36	.89
61	6	1		11	18	18	.44
62	8	1	5	8	22	22	.54
63	2	3	3	5	13	13	.32
64	5	2	3	9	19	19	.47
65	5	2	5	7	19	19	.47
66	5	2	3	4	14	14	.34
67	3	2	3	5	13	13	.32
68	1	2	2	3	8	8	.20
69			3	2	5	5	.12
70				3	3	3	.07
71	1		3	1	5	5	.12
72			1	2	3	3	.07
73							
74							
75			1	1	2	2	.05
76				1	1	1	.02
77							
78	1				1	1	.02
88		1			1	1	.02
Z	2	4	6	56	68	68	1.67
RECORDS	492	397	605	2367	4061		
ACCIDENTS	478	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

PAC -[redacted]-

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

PILOT CERTIFICATE BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STUDENT	46	34	48	311	439	434	10.81
PRIVATE	328	153	262	922	1665	1659	41.00
COMMERCIAL	160	111	160	629	1060	1059	26.10
AIRLINE TRANSPORT	37	14	27	78	156	156	3.84
PRIVATE W/FLIGHT INSTRUCTOR			2	2	4	4	.10
COML WITH FLT INSTRUCTOR	70	58	83	321	532	529	13.10
ATR W/FLIGHT INSTRUCTOR	38	18	15	72	143	143	3.52
OTHER	1				1	1	.02
NONE	0	6	6	0	30	30	.74
UNKNOWN/NOT REPORTED	3	3	2	23	31	31	.76
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

ANALYTIC TABLE

CONDITIONS OF LIGHT BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
DAWN	9	5	11	33	58	58	1.43
DAYLIGHT	473	330	499	2020	3322	3287	81.80
DUSK	31	12	34	83	160	158	3.94
NIGHT (DARK)	156	44	49	169	418	417	10.29
NIGHT (MOONLIGHT=BRIGHT)	11	5	11	40	67	67	1.65
UNKNOWN/NOT REPORTED	12	1	1	22	36	36	.89
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

TYPE WEATHER CONDITIONS BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
VFR	448	346	581	2219	3592	3554	88.45
IFR	192	28	38	107	365	365	8.99
BELOW MINIMUMS	18	3	3	4	28	28	.69
UNKNOWN/NOT REPORTED	34	2	3	37	76	76	1.87
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

ANALYTIC TABLE

TYPE FLIGHT PLAN BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
NONE	519	336	504	1931	3288	3261	80.97
VFR	50	29	56	245	380	379	9.38
IFR	100	27	34	138	299	298	7.36
CONTROLLED VFR	1	1			2	2	.05
IFR (VFR CONDITIONS ON TOP)	1			3	4	4	.10
TOWER EN ROUTE CONTROL SERVICE	2			1	3	3	.07
OVER				3	3	3	.07
VFR FLIGHT FOLLOWING SERVICE	1			4	5	5	.12
SPECIAL VFR	4	1	2	3	10	10	.25
OTHER	10	2	7	8	27	27	.66
UNKNOWN/NOT REPORTED	4	3	2	31	40	40	.98
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

MONTH OF OCCURRENCE BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
01	43	19	30	159	251	247	6.18
02	47	27	26	167	267	263	6.57
03	65	25	37	186	313	310	7.71
04	57	30	52	178	317	314	7.81
05	61	45	66	228	400	399	9.85
06	43	44	70	249	406	403	10.00
07	69	52	69	284	474	468	11.67
08	55	50	82	242	429	426	10.56
09	79	34	58	217	388	385	9.55
10	60	29	43	162	294	290	7.24
11	56	18	38	151	263	259	6.48
12	57	24	36	144	259	259	6.38
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

MONTH OF OCCURRENCE BY TYPE OF WEATHER CONDITIONS
ALL OPERATIONS

	VFR	IFR	BELOW MINIMUMS	UNKNOWN	RECORDS	ACCIDENTS	PERCENT
01	192	49	3	7	251	247	6.18
02	209	48	5	5	267	263	6.57
03	269	36	1	7	313	310	7.71
04	282	29	1	5	317	314	7.81
05	371	25	1	3	400	399	9.85
06	392	8		6	406	403	10.00
07	429	33	1	11	474	468	11.67
08	401	17	4	7	429	426	10.56
09	366	22		2	388	385	9.55
10	255	24	3	12	294	290	7.24
11	221	30	4	8	263	259	6.48
12	207	44	5	3	259	259	6.38
RECORDS	3592	365	28	76	4061		
ACCIDENTS	3554	365	28	76		4023	
PERCENTS	88.5	9.0	.7	1.9			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

MONTH OF OCCURRENCE BY FIRST TYPE OF ACCIDENT
ALL OPERATIONS

	01	02	03	04	05	06	07	08	09	10	11	12	RECORDS	ACCIDENTS
GROUND-WATER LOOP-SWERVE	39	45	36	37	44	45	45	33	39	17	20	27	427	427
DRAGGED WINGTIP POD OR FLOAT				2	1			3	1			1	8	8
WHEELS-UP LANDING	2	2	4	5	4	7	14	6	3	8	7	10	72	72
WHEELS-DOWN LANDING IN WATER					1		1				1	2	5	5
GEAR COLLAPSED	4	4	1	3	3	2	6	7	3	4	1	1	39	39
GEAR RETRACTED	2	7	4	3	2	4	2	4	1	1	3	5	38	38
HARD LANDING	13	12	23	19	37	21	27	32	25	12	22	10	253	253
NOSE OVER/DOWN	11	9	18	16	12	6	16	15	10	8	9	7	137	137
ROLL OVER	1		2		3	1	4	3	3		1	1	19	19
OVERSHOOT	9	6	12	10	17	18	20	15	23	8	13	7	158	158
UNDERSHOOT	7	9	8	13	13	11	9	6	16	8	9	13	122	122
COLLISION BETWEEN AIRCRAFT														
BOTH IN FLIGHT	7	8	4	4		2	6	4	4	6	4		49	25
ONE AIRBORNE	2		2				4	2					10	5
BOTH ON GROUND		1		2	2	4	2		2	2	3		18	10
COLLISION WITH GROUND/WATER														
CONTROLLED	19	18	26	20	24	19	25	19	19	15	23	17	244	244
UNCONTROLLED	15	13	9	14	7	4	12	10	11	7	14	14	130	130
COLLIDED WITH														
WIRES/POLES	4	5	12	6	19	22	18	26	10	11	9	7	149	149
TREES	5	8	16	18	26	23	16	26	20	20	13	12	203	203
RESIDENCE/S										2		1	3	3
BUILDING/S	2				1		1	4		1			9	9
FENCE, FENCEPOSTS	1	2	3	2	5	5	5	7	2	2	4	6	44	44
ELECTRONIC TOWERS			1			2	1		1		1	1	7	7
RUNWAY OR APPROACH LIGHTS		1			1	2	1						5	5
AIRPORT HAZARD			2	1	1	1		1				1	7	7
ANIMALS				1	1	1	3	1		1	1		9	9
CROP	1						6	1	3	1			12	12
FLAGMAN LOADER				1	1								2	2
DITCHES	1		1	6	4	6	7	8	6	2		1	42	42
SNOWBANK	20	14	11								1	5	51	51
PARKED AIRCRAFT (UNATTENDED)	2	3	9	2		3	6	2	1	5	3		36	36
AUTOMOBILE	1		1	3	3	2	1	1	2		1		15	15
DIRT BANK	2	1	1		6	8	2	3	3	2	2	2	32	32
OTHER	1	6	2	5	9	6	18	12	9	5	5	8	86	86
BIRD STRIKE										2	1		3	3

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	01	02	03	04	05	06	07	08	09	10	11	12	RECORDS	ACCIDENTS
STALL	2	3	8	12	16	17	15	10	19	11	3	11	136	136
SPIN	3	9	8	4	7	9	11	9	5	5	6	4	80	80
SPIRAL			2		2	1			2				7	7
MUSH	7	6	6	9	20	15	24	23	20	10	7	5	154	154
FIRE OR EXPLOSION														
IN FLIGHT	1	2	2	1		3	3	2	6	4	2		26	26
ON GROUND	1	1				1		2					5	5
AIRFRAME FAILURE														
IN FLIGHT	2	3	6	5	5	4	8	7	9	14	2	5	70	70
ON GROUND					1	1	1	2	1	2			8	8
ENGINE TEARAWAY	1												1	1
ENGINE FAILURE OR MALFUNCTION	57	56	64	83	87	116	118	96	96	84	66	64	987	987
PROPELLER/ROTOR FAILURE														
PROPELLER	1	2	2	1	1	1	3	2	2	1		1	17	17
TAIL ROTOR	1	1		2	3	1		3	2	3	2	1	19	19
MAIN ROTOR		1			4	1	3	3				1	13	13
PROP ROTOR ACONT TO PERSON		2		1	1	4	2	3	1	3	1	2	20	20
JET INTAKE/EXH ACONT TO PERS														
PROPELLER/JET/ROTOR BLAST						1	1		1	1			4	4
TURBULENCE	1	2	3	2		1		4	3	1		1	18	18
HAIL DAMAGE TO AIRCRAFT														
LIGHTNING STRIKE														
EVASIVE MANEUVER	1		1						1	1			4	4
UNCONTROLLED ALT DEVIATION														
DITCHING			1				1		1				3	3
MISSING ACFT NOT RECOVERED	1	3	2	2	2	1	2		1	4	1	2	21	21
MISCELLANEOUS/OTHER		2		1	3	3	1	2			2	2	16	16
UNDETERMINED	1			1	1	1	1	1	1			1	8	8
RECORDS	251	267	313	317	400	406	474	429	388	294	243	259	4061	
ACCIDENTS	247	263	310	314	399	403	468	426	385	290	259	259		4023

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

STATE OF OCCURRENCE BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
ALABAMA	7	7	8	28	50	50	1.23
ALASKA	36	8	30	144	218	218	5.37
ARIZONA	16	11	20	78	125	125	3.08
ARKANSAS	10	9	11	61	91	90	2.24
CALIFORNIA	88	51	70	255	464	459	11.43
COLORADO	19	12	21	62	114	114	2.81
CONNECTICUT	6		5	18	29	26	.71
DELAWARE			1	2	3	3	.07
FLORIDA	50	24	30	138	242	237	5.96
GEORGIA	14	15	15	49	93	93	2.29
HAWAII	1	2	2	11	16	16	.39
IDAHO	17	8	5	25	55	55	1.35
ILLINOIS	23	6	21	78	128	127	3.15
INDIANA	13	7	13	37	70	69	1.72
IOWA	3	5	6	38	52	51	1.28
KANSAS	13	8	11	51	83	81	2.04
KENTUCKY	10	3	7	18	38	38	.94
LOUISIANA	18	3	14	67	102	102	2.51
MAINE	4	3	8	12	27	27	.66
MARYLAND	4	2	5	19	30	30	.74
MASSACHUSETTS	5	1	6	21	33	32	.81
MICHIGAN	21	9	17	71	118	115	2.91
MINNESOTA	7	5	11	50	73	73	1.80
MISSISSIPPI	13	3	10	19	45	44	1.11
MISSOURI	11	18	11	50	90	90	2.22
MONTANA	8	6	3	32	49	49	1.21
NEBRASKA	3	2	9	27	41	41	1.01
NEVADA	5	6	7	31	49	49	1.21
NEW HAMPSHIRE	4		3	7	14	14	.34
NEW JERSEY	7	6	9	33	55	53	1.35
NEW MEXICO	13	8	17	54	92	90	2.27
NEW YORK	17	21	15	61	114	113	2.81
NORTH CAROLINA	11	6	8	24	49	49	1.21
NORTH DAKOTA	3	2	1	11	17	17	.42
OHIO	19	11	20	63	113	111	2.78
OKLAHOMA	14	5	11	36	66	65	1.63
OREGON	7	11	18	53	89	89	2.19

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENT	PERCENT
PENNSYLVANIA	19	10	11	65	105	105	
RHODE ISLAND		1		2	3	3	
SOUTH CAROLINA	7	1	6	13	27	27	.66
SOUTH DAKOTA	3	4	1	19	27	27	.66
TENNESSEE	7	3	9	20	39	38	.96
TEXAS	35	34	37	185	291	291	7.17
UTAH	12	3	4	19	40	39	.98
VERMONT	3	1	3	8	15	15	.37
VIRGINIA	10	6	5	42	63	63	1.55
WASHINGTON	21	11	20	64	116	115	2.86
WEST VIRGINIA	6	4	2	14	26	25	.64
WISCONSIN	14	9	17	48	90	88	2.22
WYOMING	5	3	6	19	33	33	.81
UNKNOWN/NOT REPORTED	20			1	21	21	.52
PUERTO RICO	2	1	3	7	13	13	.32
VIRGIN ISLANDS	1			1	2	2	.05
SAMOA		1			1	1	.02
OTHER-U.S.TERRITORIES&POSSES.							
CANADA							
MEXICO							
CENTRAL AMERICA							
SOUTH AMERICA							
EUROPE							
ASIA							
AFRICA							
GREENLAND							
OTHER-FOREIGN COUNTRIES							
PACIFIC OCEAN NORTH LATITUDES	2				2	2	.05
ATLANTIC OCEAN NORTH LAT.	1			5	6	6	.15
ATLANTIC OCEAN SOUTH LAT.	1				1	1	.02
OTHER-INTERNATIONAL WATERS							
WASHINGTON, D. C.	1	1		1	3	3	.07
RECORDS	492	397	605	2367	4061		
ACCIDENTS	478	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

STATE OF OCCURRENCE BY AIRCRAFT DAMAGE

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
ALABAMA	17	33			50	50	1.23
ALASKA	32	185	1		218	218	5.37
ARIZONA	27	96	1	1	125	125	3.08
ARKANSAS	29	62			91	90	2.24
CALIFORNIA	140	319	2	3	464	459	11.43
COLORADO	24	87	1	2	114	114	2.81
CONNECTICUT	5	23	1		29	28	.71
DELAWARE		3			3	3	.07
FLORIDA	85	152	3	2	242	237	5.96
GEORGIA	26	65		2	93	93	2.29
HAWAII	5	11			16	16	.39
IDAHO	25	29		1	55	55	1.35
ILLINOIS	30	98			128	127	3.15
INDIANA	17	53			70	69	1.72
IOWA	12	40			52	51	1.28
KANSAS	17	64	2		83	81	2.04
KENTUCKY	12	25		1	38	38	.94
LOUISIANA	24	78			102	102	2.51
MAINE	3	24			27	27	.66
MARYLAND	9	21			30	30	.74
MASSACHUSETTS	6	26		1	33	32	.81
MICHIGAN	26	91	1		118	115	2.91
MINNESOTA	10	63			73	73	1.80
MISSISSIPPI	23	22			45	44	1.11
MISSOURI	19	67	2	2	90	90	2.22
MONTANA	14	35			49	49	1.21
NEBRASKA	5	36			41	41	1.01
NEVADA	13	35		1	49	49	1.21
NEW HAMPSHIRE	5	9			14	14	.34
NEW JERSEY	8	47			55	53	1.35
NEW MEXICO	16	72	4		92	90	2.27
NEW YORK	22	89	2	1	114	113	2.81
NORTH CAROLINA	17	32			49	49	1.21
NORTH DAKOTA	4	13			17	17	.42
OHIO	29	84			113	111	2.78
OKLAHOMA	19	46		1	66	65	1.63
OREGON	17	72			89	89	2.19

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
PENNSYLVANIA	27	78			105	105	2.59
RHODE ISLAND		3			3	3	.07
SOUTH CAROLINA	11	16			27	27	.66
SOUTH DAKOTA	3	21	1	2	27	27	.66
TENNESSEE	16	23			39	38	.96
TEXAS	67	219	5		291	291	7.17
UTAH	10	29	1		40	39	.98
VERMONT	3	12			15	15	.37
VIRGINIA	18	44		1	63	63	1.55
WASHINGTON	27	88	1		116	115	2.86
WEST VIRGINIA	8	17		1	26	25	.64
WISCONSIN	23	65	1	1	90	88	2.22
WYOMING	7	26			33	33	.81
UNKNOWN/NOT REPORTED	21				21	21	.52
PUERTO RICO	8	5			13	13	.32
VIRGIN ISLANDS	1	1			2	2	.05
SAMOA	1				1	1	.02
OTHER-U.S.TERRITORIES&POSSES.							
CANADA							
MEXICO							
CENTRAL AMERICA							
SOUTH AMERICA							
EUROPE							
ASIA							
AFRICA							
GREENLAND							
OTHER-FOREIGN COUNTRIES							
PACIFIC OCEAN NORTH LATITUDES	2				2	2	.05
ATLANTIC OCEAN NORTH LAT.	6				6	6	.15
ATLANTIC OCEAN SOUTH LAT.	1				1	1	.02
OTHER-INTERNATIONAL WATERS							
WASHINGTON, D. C.	2	1			3	3	.07
RECORDS	1054	2955	29	23	4061		
ACCIDENTS	1051	2940	29	23		4023	
PERCENTS	26.0	72.8	.7	.6			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

TYPE OF AIRCRAFT BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
FIXED-WING	649	330	542	2177	3698	3660	91.06
HELICOPTER	33	34	50	159	276	276	6.80
GLIDER	2	17	9	26	54	54	1.33
BALLOON	2	15	1	2	20	20	.49
BLIMP							
DIRIGIBLE							
ROCKET							
CONVERTIPLANE							
GYROPLANE	6	1	3	3	13	13	.32
OTHER							
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

ANALYTIC TABLE

TYPE OF AIRCRAFT BY AIRCRAFT DAMAGE
ALL OPERATIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
FIXED-WING	967	2696	22	15	3698	3660	91.06
HELICOPTER	67	206	2	1	276	276	6.80
GLIDER	10	43	1		54	54	1.33
BALLOON	5	4	4	7	20	20	.49
BLIMP							
DIRIGIBLE							
ROCKET							
CONVERTIPLANE							
GYROPLANE	5	8			13	13	.32
OTHER							
RECORDS	1054	2955	29	23	4061		
ACCIDENTS	1051	2940	29	23		4023	
PERCENTS	.0	26.0	72.8	.7	.6		

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BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

TYPE OF POWER BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
RECIPROCATING ENGINE	650	347	564	2253	3814	3776	93.92
TURBOJET ENGINE	4	1	1	12	18	18	.44
TURBOPROP ENGINE	18	4	7	25	54	54	1.33
TURBOFAN ENGINE			2	2	4	4	.10
NONE	5	31	11	28	75	75	1.85
TURBOSHAFT	15	14	20	47	96	96	2.36
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	345	603	2367		4023	
PERCENTS	17.0	9.8	14.9	58.3			

ANALYTIC TABLE

TYPE OF POWER BY AIRCRAFT DAMAGE
ALL OPERATIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
RECIPROCATING ENGINE	984	2793	21	16	3814	3776	93.92
TURBOJET ENGINE	6	12			18	18	.44
TURBOPROP ENGINE	23	29	2		54	54	1.33
TURBOFAN ENGINE		5			4	4	.10
NONE	16	47	5	7	75	75	1.85
TURBOSHAFT	25	70	1		96	96	2.36
RECORDS	1054	2955	29	23	4061		
ACCIDENTS	1051	2940	29	23		4023	
PERCENTS	26.0	72.8	.7	.6			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

AIRPORT PROXIMITY VS INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
ON AIRPORT	85	104	225	1396	1810	1789	44.57
ON SEAPLANE BASE	3			16	19	19	.47
ON HELIPORT			4	7	11	11	.27
ON BARGE/SHIP/PLATFORM				3	3	3	.07
IN TRAFFIC PATTERN	19	19	25	53	116	114	2.86
WITHIN 1/4 MILE	41	44	47	92	224	224	5.52
WITHIN 1/2 MILE	40	5	28	36	109	108	2.68
WITHIN 3/4 MILE	10	3	3	6	22	22	.54
WITHIN 1 MILE	25	16	22	21	84	83	2.07
WITHIN 2 MILES	43	20	24	55	142	141	3.50
WITHIN 3 MILE	29	12	8	41	90	90	2.22
WITHIN 4 MILES	11	4	12	19	46	45	1.13
WITHIN 5 MILES	14	3	4	18	39	37	.96
BEYOND 5 MILES	331	139	165	475	1110	1104	27.33
UNKNOWN/NOT REPORTED	41	28	38	129	236	235	5.81
RECORDS	692	397	605	2367	4061		
ACCIDENTS	678	395	603	2347		4023	
PERCENTS	17.0	9.8	14.9	58.3			

ANALYTIC TABLE

FIRE AFTER IMPACT BY INJURY INDEX
ALL OPERATIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
YES	177	51	40	41	409	409	94.21
UNKNOWN/NOT REPORTED	6	2	2	9	19	19	5.79
RECORDS	183	53	42	50	428		
ACCIDENTS	183	53	42	50		428	
PERCENTS	55.8	16.2	12.8	15.2			

BEST DOCUMENT AVAILABLE

GENERAL AVIATION ACCIDENTS

SMALL FIXED-WING AIRCRAFT

ANALYTIC TABLE

FIRST TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
SMALL FIXED WING

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE	17	399	1		417	417	11.40
DRAGGED WINGTIP POD OR FLOAT		8			8	8	.22
WHEELS-UP LANDING		71			71	71	1.94
WHEELS-DOWN LANDING IN WATER		5			5	5	.14
GEAR COLLAPSED	1	36			37	37	1.01
GEAR RETRACTED		37	1		38	38	1.04
HARD LANDING	8	203			211	211	5.77
NOSE OVER/DOWN	5	129	1		135	135	3.69
ROLL OVER							
OVERSHOOT	9	143	1		153	153	4.18
UNDERSHOOT	25	85			110	110	3.01
COLLISION BETWEEN AIRCRAFT							
BOTH IN FLIGHT	20	21	5	1	47	24	1.28
ONE AIRBORNE		9	1		10	5	.27
BOTH ON GROUND	1	14	2		17	9	.46
COLLISION WITH GROUND/WATER							
CONTROLLED	133	78			211	211	5.77
UNCONTROLLED	104	11			115	115	3.14
COLLIDED WITH							
WIRES/POLES	54	61			115	115	3.14
TREES	113	72			185	185	5.06
RESIDENCE/S	3				3	3	.08
BUILDING/S	2	5			7	7	.19
FENCE, FENCEPOSTS	5	35			40	40	1.09
ELECTRONIC TOWERS	2	3			5	5	.14
RUNWAY OR APPROACH LIGHTS		4			4	4	.11
AIRPORT HAZARD		7			7	7	.19
ANIMALS	1	7			8	8	.22
CROP	1	9			10	10	.27
FLAGMAN LOADER			1		1	1	.03
DITCHES	5	36			41	41	1.12
SNOWBANK		50			50	50	1.37
PARKED AIRCRAFT (UNATTENDED)	1	30	3		34	34	.93
AUTOMOBILE	1	14			15	15	.41
DIRT BANK	1	29			30	30	.82
OTHER	6	62	1		69	69	1.89
BIRD STRIKE	1	1			2	2	.05

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STALL	67	65			132	132	3.41
SPIN	57	14			71	71	1.94
SPIRAL	6	1			7	7	.19
MUSH	97	115			152	152	4.15
FIRE OR EXPLOSION							
IN FLIGHT	13	13			26	26	.71
ON GROUND	1	4			5	5	.14
AIRFRAME FAILURE							
IN FLIGHT	36	23			57	57	1.56
ON GROUND		5			5	5	.14
ENGINE RUNAWAY	1				1	1	.03
ENGINE FAILURE OR MALFUNCTION	179	719	1		899	899	24.57
PROPELLER/ROTOR FAILURE							
PROPELLER	2	13			15	15	.41
TAIL ROTOR							
MAIN ROTOR							
PROP ROTOR ACONT TO PERSON		2	4	13	19	19	.52
JET INTAKE/EXH ACONT TO PERS							
PROPELLER/JET/ROTOR BLAST		4			4	4	.11
TURBULENCE	8	7		1	16	16	.44
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE					4	4	.11
EVASIVE MANEUVER		4					
UNCONTROLLED ALT DEVIATION					3	3	.08
DITCHING	2	1			20	20	.55
MISSING ACFT NOT RECOVERED	20				6	6	.16
MISCELLANEOUS/OTHER	1	5			6	6	.16
UNDETERMINED	4	2					
					3659		
RECORDS	951	2671	22	15		3622	
ACCIDENTS	948	2656	22	15			
PERCENTS	26.0	73.0	.6	.4			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

FIRST PHASE OF OPERATION BY INJURY INDEX
SMALL FIXED WING

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STATIC							
STARTING ENGINE/S		5	1	6			
IDLING ENGINE/S	5	9	1	3	12	12	.33
ENGINE RUNUP	1			1	18	18	.49
IDLING ROTORS					2	2	.05
PARKED-ENGINES NOT OPERATING							
OTHER							
TAXI							
TO TAKEOFF		2	2	48			
FROM LANDING	1		5	41	52	50	1.42
OTHER		2	3	15	47	47	1.28
GROUND TAXI TO TAKEOFF					20	20	.55
GROUND TAXI FROM LANDING				2			
GROUND TAXI, OTHER					2	2	.05
AERIAL TAXI TO TAKEOFF							
AERIAL TAXI TO/FROM LANDING							
AERIAL TAXI, OTHER							
TAKEOFF							
RUN	6	4	26	153			
INITIAL CLIMB	73	53	105	237	189	188	5.17
VERTICAL					488	467	12.79
RUNNING (ROTORCRAFT/VTOL-STOL)							
ABORTED (FIXED-WING)	1	3	12	60	76	76	2.08
ABORTED (ROTORCRAFT/VTOL)							
ABORTED (ROTORCRAFT/STOL)							
OTHER				1	1	1	.03
INFLIGHT							
CLIMB TO CRUISE	34	10	20	36	100	99	2.73
NORMAL CRUISE	132	71	95	245	549	534	14.84
DESCENDING	13	10	14	41	78	78	2.13
HOLDING (IFR)							
HOVERING							
POWER-ON DESCENT (ROTORCRAFT)							
AUTOROTATIVE DESCENT							
ACROBATICS	25	1	3	4	33	33	.90
BUZZING	23	2	1	3	29	29	.79
UNCONTROLLED DESCENT	80	2		3	85	85	2.32

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EMERGENCY DESCENT	2				2	2	.05
LOW PASS	28	19	4	21	68	68	1.86
OTHER	37	13	8	33	91	91	2.49
EN ROUTE TO TREAT CROP	1	4		3	8	8	.22
EN ROUTE TO RELOADING ARE	1		1	2	4	4	.11
SURVEY FIELD/AREA	1	1	1	2	5	5	.14
STARTING SWATH RUN	3	3	4	10	20	20	.55
SWATH RUN	3	8	12	27	50	50	1.37
FLAREOUT FOR SWATH RUN	1	1	1	2	5	5	.14
PULLUP FROM SWATH RUN	4	7	11	11	33	33	.90
PROCEDURE TURNAROUND	2	11	12	25	50	50	1.37
CLEANUP SWATH		1	2	5	8	8	.22
MANEUVER TO AVOID OBSTRUCTION				1	1	1	.03
RETURN TO STRIP	1		3	4	8	8	.22
LANDING							
TRAFFIC PATTERN-CIRCLING	28	12	22	30	92	90	2.51
FINAL APPROACH (VFR)	34	27	45	108	214	210	5.85
INITIAL APPROACH	5	2	1	2	10	10	.27
FINAL APPROACH (IFR)	26	7	7	11	51	51	1.39
LEVEL OFF/TOUCHDOWN	9	18	59	474	560	559	15.30
ROLL (FIXED WING)	3	5	39	405	452	452	12.35
ROLL-ON/RUN-ON (ROTORCRAFT)							
POWER-ON LANDING (ROTORCRAFT)							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUND (VFR)	17	13	16	68	114	114	3.12
MISSED APPROACH (IFR)	9	4	1		14	14	.38
OTHER	1	2	1	4	8	8	.22
UNKNOWN/NOT REPORTED	26		1	9	36	36	.98
RECORDS	636	328	539	2156	3659		
ACCIDENTS	623	326	537	2136		3622	
PERCENTS	17.4	9.0	14.7	58.9			

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

SMALL FIXED WING

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 3622 TOTAL ACCIDENTS

INVOLVES 623 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	530 85.07	123 19.74	537 86.20	2386 79.56	241 8.04	2407 80.26	2916 80.51	364 10.05	2944 81.28
PERSONNEL	47 7.54	31 4.98	76 12.20	217 7.24	33 1.10	249 8.30	264 7.29	64 1.77	325 8.97
AIRFRAME	8 1.28	16 2.57	23 3.69	13 .43	9 .30	22 .73	21 .58	25 .69	45 1.24
LANDING GEAR	 .00	 .00	 .00	120 4.00	17 .57	137 4.57	120 3.31	17 .47	137 3.78
POWERPLANT	50 8.03	5 .80	54 8.67	450 15.01	34 1.13	476 15.87	500 13.80	39 1.08	530 14.63
SYSTEMS	8 1.28	2 .32	10 1.61	37 1.23	15 .50	52 1.73	45 1.24	17 .47	62 1.71
INSTRUMENTS/EQUIPMENT & ACCESSORIES	1 .16	2 .32	3 .48	3 .10	7 .23	10 .33	4 .11	9 .25	13 .36
ROTORCRAFT	 .00	 .00	 .00	 .00	 .00	 .00	 .00	 .00	 .00
AIRPORT/AIRWAYS/FACILITIES	 .00	10 1.61	10 1.61	24 .80	281 9.37	305 10.17	24 .66	291 8.03	315 8.70
WEATHER	6 .96	266 42.70	268 43.02	33 1.10	518 17.27	546 18.21	39 1.08	784 21.65	814 22.47
TERRAIN	1 .16	87 13.96	88 14.13	91 3.03	638 21.27	727 24.24	92 2.54	725 20.02	815 22.50
MISCELLANEOUS	16 2.57	4 .64	20 3.21	86 2.87	26 .87	110 3.67	102 2.82	30 .83	130 3.59
UNDETERMINED	49 7.87	 .00	49 7.87	36 1.20	 .00	36 1.20	85 2.35	 .00	85 2.35

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

SMALL FIXED WING

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 3622 TOTAL ACCIDENTS

INVOLVES 623 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
ATTEMPTED OPERATION W/KNOWN DEFICIENCIES IN EQUIPMENT	5	5	10	18	6	24	23	11	34
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	20	12	32	10	11	21	30	23	53
BECAME LOST/DISORIENTED	13	5	18	34	9	43	47	14	61
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	127	2	129	40	6	46	167	8	175
CONTINUED INTO KNOWN AREA OF SEVERE TURBULENCE	9		9	3		3	12		12
DELAYED ACTION IN ABORTING TAKEOFF				70	3	73	70	3	73
DELAYED IN INITIATING GO-AROUND	4	2	6	101	1	102	105	3	108
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	7	7	14	27	11	38	34	18	52
EXCEEDED DESIGN STRESS LIMITS OF AIRCRAFT	19		19	4		4	23		23
FAILED TO EXTEND LANDING GEAR				33		33	33		33
FAILED TO RETRACT LANDING GEAR	1	2	3	5		5	6	2	8
RETRACTED GEAR PREMATURELY				4		4	4		4
INADVERTENTLY RETRACTED GEAR				10		10	10		10
FAILED TO SEE AND AVOID OTHER AIRCRAFT	15		15	28		28	43		43
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	21		21	92	1	93	113	1	114
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	129		129	228		228	357		357
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE	10		10	7	1	8	17	1	18
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT	1	2	3	7	5	12	8	7	15
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	14	4	18	40	6	46	54	10	64
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS	4		4	85	5	90	89	5	94
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				149	2	151	149	2	151
IMPROPER OPERATION OF FLIGHT CONTROLS	4	1	5	24	1	25	28	2	30
PREMATURE LIFT OFF	2		2	53	6	59	55	6	61
IMPROPER LEVEL OFF	2		2	194		194	196		196
IMPROPER IFR OPERATION	35	1	36	21	1	22	56	2	58
IMPROPER IN-FLIGHT DECISIONS OR PLANNING	40	3	43	84	8	92	124	11	135
IMPROPER COMPENSATION FOR WIND CONDITIONS	1		1	105	6	111	106	6	112
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	56	29	85	334	38	372	390	67	457
INADEQUATE SUPERVISION OF FLIGHT	7	2	9	73	2	75	80	4	84
LACK OF FAMILIARITY WITH AIRCRAFT	3	16	19	14	62	76	17	78	95
MISMANAGEMENT OF FUEL	12	1	13	233	1	234	245	2	247
EXERCISED POOR JUDGMENT	11	13	24	21	4	25	32	17	49
OPERATED CARELESSLY				1	2	3	1	2	3
SELECTED UNSUITABLE TERRAIN	3		3	201	7	208	204	7	211
IMPROPER STARTING PROCEDURES		1	1	5	1	6	5	2	7
STARTED ENGINE WITHOUT PROPER ASSISTANCE/EQUIPMENT				15		15	15		15
TAXIED/PARKED WITHOUT PROPER ASSISTANCE				14		14	14		14
FAILED TO ASSURE THE GEAR WAS DOWN AND LOCKED				20	1	21	20	1	21
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS	22	3	25	20	2	22	42	5	47
SPONTANEOUS-IMPROPER ACTION	1		1	7		7	8		8
MISJUDGED DISTANCE, SPEED, AND ALTITUDE	7		7	24		24	31		31
MISJUDGED DISTANCE AND SPEED	3		3	148	2	150	151	2	153
MISJUDGED DISTANCE	1		1	6		6	7		7
MISJUDGED DISTANCE AND ALTITUDE	9		9	88		88	97		97
MISJUDGED SPEED AND ALTITUDE	1		1	5		5	6		6
MISJUDGED SPEED				4		4	4		4
MISJUDGED SPEED AND CLEARANCE	1		1	3		3	4		4
MISJUDGED ALTITUDE AND CLEARANCE	28		28	34		34	62		62
MISJUDGED ALTITUDE	9		9	11		11	20		20
MISJUDGED CLEARANCE	12		12	68		68	80		80
MISUNDERSTANDING OF ORDERS OR INSTRUCTIONS				2		2	2		2
IMPROPER RECOVERY FROM BOUNCED LANDING	1		1	108	3	111	109	3	112
INCAPACITATION	4	1	5	1		1	5	1	6
PHYSICAL IMPAIRMENT	17	20	37	6	4	10	23	24	47
SPATIAL DISORIENTATION	85		85	5		5	90		90
PSYCHOLOGICAL CONDITION	1		1				1		1
MISUSED OR FAILED TO USE FLAPS	3	6	9	16	11	27	19	17	36
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING					1	1		1	1
FAILED TO MAINTAIN DIRECTIONAL CONTROL	2		2	176		176	178		178
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND		2	2	53	15	68	53	17	70
FAILED TO ABORT TAKEOFF	9	1	10	46	5	51	55	6	61
FAILED TO INITIATE GO-AROUND		1	1	114	2	116	114	3	117
DIRECT ENTRIES	3		3	2		2	5		5
SUBTOTAL	794	142	936	3354	252	3606	4148	394	4542

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
COPILOT									
BECAME LOST/DISORIENTED					1	1		1	1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED				1		1	1		1
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES, ETC					1	1		1	1
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS	1		1				1		1
IMPROPER LEVEL OFF				1		1	1		1
IMPROPER IFR OPERATION	1		1				1		1
FAILURE TO RELINQUISH CONTROL				1		1	1		1
MISJUDGED DISTANCE AND SPEED				1		1	1		1
MISJUDGED DISTANCE AND ALTITUDE				2		2	2		2
MISJUDGED ALTITUDE AND CLEARANCE	1		1				1		1
MISJUDGED CLEARANCE	1		1				1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				1		1	1		1
SPATIAL DISORIENTATION				1		1	1		1
MISUSED OR FAILED TO USE FLAPS	1		1				1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL	1		1				1		1
SUBTOTAL	6		6	9	2	11	15	2	17
DUAL STUDENT									
DELAYED IN INITIATING GO-AROUND				1		1	1		1
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				1		1	1		1
EXCEEDED DESIGNED STRESS LIMITS OF AIRCRAFT				1		1	1		1
FAILED TO EXTEND LANDING GEAR				1		1	1		1
INADVERTENTLY RETRACTED GEAR				2		2	2		2
FAILED TO SEE OTHER AIRCRAFT	2		2	1		1	3		3
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS				4		4	4		4
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	2		2	6	1	7	8	1	9
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				7		7	7		7
IMPROPER OPERATION OF FLIGHT CONTROLS				1		1	1		1
PREMATURE LIFT-OFF				2		2	2		2
IMPROPER LEVEL OFF				9		9	9		9
IMPROPER IFR OPERATION							1		1
IMPROPER COMPENSATION FOR WIND CONDITIONS	1		1	6		6	6		6
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				1		1	1		1
LACK OF FAMILIARITY WITH AIRCRAFT		1	1		4	4		5	5
MISMANAGEMENT OF FUEL				1		1	1		1
SELECTED UNSUITABLE TERRAIN				1	1	2	1	1	2
FAILURE TO RELINQUISH CONTROL				1		1	1		1
SPONTANEOUS-IMPROPER ACTION				1		1	1		1
MISJUDGED DISTANCE AND SPEED				2		2	2		2
MISJUDGED DISTANCE AND ALTITUDE				5		5	5		5
MISJUDGED SPEED AND ALTITUDE				1		1	1		1
MISJUDGED SPEED				1		1	1		1
MISJUDGED ALTITUDE AND CLEARANCE				1		1	1		1
MISJUDGED ALTITUDE				1		1	1		1
MISJUDGED CLEARANCE				2		2	2		2
IMPROPER RECOVERY FROM BOUNCED LANDING				3		3	3		3
SPATIAL DISORIENTATION	1		1				1		1
MISUSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO MAINTAIN DIRECTIONAL CONTROL				6		6	6		6
FAILED TO INITIATE GO-AROUND				2		2	2		2
SUBTOTAL	6	1	7	72	6	78	78	7	85
CHECK PILOT									
FAILED TO SEE OTHER AIRCRAFT	1		1						
INADEQUATE SUPERVISION OF FLIGHT				5	1	6	5	1	6
EXERCISED POOR JUDGEMENT					1	1		1	1
SUBTOTAL	1		1	5	2	7	6	2	8
** PERSONNEL **									
RULES, REGULATIONS, STANDARDS PERSONNEL									
FLIGHT INSTRUCTOR		3	3					3	3
INADEQUATE SUPERVISION OF FLIGHT		1	1	4	3	7	4	4	8
INADEQUATE TRAINING OF STUDENT					3	3		3	3
MAINTENANCE, SERVICING, INSPECTION	5	1	6	35	1	36	40	2	42
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)	4	1	5	2		2	6	1	7
IMPROPER MAINTENANCE(OWNER PERSONNEL)	1		1	3		3	4		4
IMPROPERLY SERVICED AIRCRAFT(GROUND CREW)	1		1	1		1	2		2
IMPROPERLY SERVICED AIRCRAFT(OWNER-PILOT)	1	1	2	6	1	7	7	2	9
INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNEL)	1	1	2	2		2	2	1	3
INADEQUATE INSPECTION OF ACFT(OWNER-PILOT PERSONNEL)	10	7	17	93	7	100	103	14	117
INADEQUATE MAINTENANCE AND INSPECTION									

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
OTHER	1		1	5		5	6		6
OPERATIONAL SUPERVISORY PERSONNEL									
INADEQUATE FLIGHT TRAINING-PROCEDURES		3	3					3	3
INADEQUATE GROUND TRAINING-PROCEDURES		1	1					1	1
INADEQUATE SUPERVISION OF FLIGHT CREW		2	2					2	2
INADEQUATE SUPERVISION/TRAINING OF RAMP CREWS	1		1				1		1
FAILURE TO PROVIDE ADEQ DIRECTIVES, MANUALS, EQUIPMENT					1	1		1	1
DEFICIENCY, COMPANY MAINTAINED EQMT, SERV, REGULATIONS		4	4	1		1	1	4	5
WEATHER PERSONNEL									
INCORRECT WEATHER FORECAST		1	1	1	1	2	1	2	3
INCOMPLETE WEATHER REPORT		1	1					1	1
INADEQUATE/INCORRECT WEATHER BRIEFING		2	2	1		1	1	2	3
TRAFFIC CONTROL PERSONNEL									
FAILURE TO ADVISE OF UNSAFE WEATHER CONDITION		2	2					2	2
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS	1	1	2	2		2	3	1	4
INADEQUATE SPACING OF AIRCRAFT					1	1		1	1
FAILURE TO PROPERLY IDENTIFY AIRCRAFT ON RADAR		1	1					1	1
OTHER		2	2	5		5	5	2	7
AIRPORT SUPERVISORY PERSONNEL									
FAILURE TO NOTIFY OF UNSAFE COND/AND OR FAILURE TO MARK				2	2	4	2	2	4
IMPROPER/INADEQUATE SNOW REMOVAL				1	4	5	1	4	5
OTHER					1	1		1	1
AIRWAYS FACILITIES PERSONNEL									
FAILURE TO ISSUE NOTAM					1	1		1	1
OTHER		1	1					1	1
PRODUCTION-DESIGN-PERSONNEL									
SUBSTANDARD QUALITY CONTROL				2	1	3	2	1	3
POOR/INADEQUATE DESIGN				3	1	4	3	1	4
OTHER	3		3	2	1	3	5	1	6
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	19		19	33	1	34	52	1	53
GROUND SIGNALMAN					1	1		1	1
SPECTATOR	1		1				1		1
GROUND CREWMAN				1		1	1		1
PASSENGER	2	1	3	10	2	12	12	3	15
DRIVER OF VEHICLE	1		1	15	2	17	16	2	18
OTHER	2	1	3	3	1	4	5	2	7
DIRECT ENTRIES	1		1				1		1
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	54	38	92	233	36	269	287	74	361
** AIRFRAME **									
WINGS	2	11	13				2	11	13
SPARS				1		1	1		1
RIBS, STRINGERS, CAP STRIPS	3	2	5				3	2	5
WING ATTACHMENT FITTINGS, BOLTS				1		1	1		1
BRACING WIRES, STRUTS	1	1	2		2	2	1	3	4
SKIN AND ATTACHMENTS				2	2	4	2	2	4
FUSELAGE									
DOORS, DOOR FRAMES		1	1	2	1	3	2	2	4
WINDSHIELDS, WINDOWS, CANOPIES		1	1	4	1	5	4	2	6
SEATS				20		20	20		20
LANDING GEAR									
MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC				32	2	34	32	2	34
NORMAL RETRACTION/EXTENSION ASSEMBLY				4		4	4		4
EMERGENCY/EXTENSION ASSEMBLY				5		5	5		5
TAILWHEEL ASSEMBLIES				6	1	7	6	1	7
NOSEWHEEL ASSEMBLIES				6	2	8	6	2	8
WHEELS, TIRES, AXLES				1		1	1		1
SKI ASSEMBLIES				2		2	2		2
FLOAT ASSEMBLIES				37	3	40	37	3	40
BRAKING SYSTEM (NORMAL)					1	1		1	1
BRAKING SYSTEM (EMERGENCY)					7	7		7	7
LANDING GEAR WARNING AND INDICATING COMPONENTS				6		6	6		6
GEAR LOCKING MECHANISM				1	1	2	1	1	2
SWITCHES, LEVERS, CRANKING MECHANISM, ETC				4		4	4		4
NOSEWHEEL STEERING				3		3	3		3
OTHER									
FLIGHT CONTROL SURFACES		1	1	2	1	3	2	2	4
ELEVATOR, ASSEMBLY ATTACHMENTS		1	2				1	1	2
RUDDER, SURFACES ATTACHMENTS	1								

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

AIRFRAME (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
AILERON, SURFACES ATTACHMENTS					1	1		1	1
HORIZONTAL STABILIZER, ATTACHMENTS		4	4					4	4
VERTICAL STABILIZER, ATTACHMENTS	1		1	1		1	2		2
FLAP ASSEMBLIES					1	1		1	1
SUBTOTAL	8	22	30	140	26	166	148	48	196
** POWERPLANT **									
ENGINE STRUCTURE									
CRANKCASE	1		1	1		1	2		2
CRANKSHAFT	2		2	10		10	12		12
MASTER AND CONNECTING RODS	2		2	16	1	17	18	1	19
CYLINDER ASSEMBLY	1		1	21	1	22	22	1	23
PISTON, PISTON RINGS	1		1	4	1	5	5	1	6
VALVE ASSEMBLIES	3		3	29	1	30	32	1	33
BLOWER, IMPELLER ASSEMBLY				5		5	5		5
OTHER				8	1	9	8	1	9
IGNITION SYSTEM									
MAGNETOES		1	1	16	2	18	16	3	19
SPARK PLUG				6	1	7	6	1	7
IGNITION HARNESS, SHIELDING					1	1		1	1
SWITCHES				1	1	2	1	1	2
LEADS				1		1	1		1
OTHER				2		2	2		2
FUEL SYSTEM									
TANKS	1		1	1		1	2		2
LINES AND FITTINGS	1		1	13	1	14	14	1	15
SELECTOR VALVES	1		1	11		11	12		12
FILTERS, STRAINERS, SCREENS				4		4	4		4
CARBURETOR				20	1	21	20	1	21
PUMPS		1	1	12	1	13	12	2	14
FUEL INJECTION SYSTEM	1		1	9		9	10		10
VENTS, DRAINS, TANK CAPS				12	3	15	12	3	15
RAM AIR ASSEMBLY	2		2	6		6	8		8
OTHER	1		1	5	1	6	6	1	7
LUBRICATING SYSTEM									
LINES, HOSES, FITTINGS	1	1	2	8		8	9	1	10
VALVES				1		1	1		1
FILTERS, SCREENS				4		4	4		4
PUMP-PRESSURE				2		2	2		2
OIL COOLERS				1		1	1		1
SEALS AND GASKETS				3		3	3		3
OTHER	1		1	5		5	6		6
COOLING SYSTEM									
COWLING		1	1					1	1
BAFFLES	1		1	1		1	2		2
OTHER					1	1		1	1
PROPELLER AND ACCESSORIES									
BLADES				7		7	7		7
HYDRAULIC PITCH CONTROL MECHANISM				2		2	2		2
GOVERNORS		1	1	3		3	3	1	4
BLADE RETENTION MECHANISM				2		2	2		2
OTHER	1		1	1		1	2		2
EXHAUST SYSTEM									
MANIFOLDS				3		3	3		3
MUFFLERS				1		1	1		1
STACKS	1		1	1		1	2		2
BAFFLES				1		1	1		1
EXTERNAL SUPERCHARGER	1		1				1		1
OTHER				1		1	1		1
ENGINE ACCESSORIES									
STARTERS					1	1		1	1
OTHER				2		2	2		2
ENGINE CONTROLS									
THROTTLE-POWER LEVER ASSEMBLIES				10	4	14	10	4	14
MIXTURE CONTROL ASSEMBLIES	1		1	1		1	2		2
INDUCTION AIR, PREHEAT CONTROLS				2		2	2		2
POWERPLANT-INSTRUMENTS									
FUEL QUANTITY GAUGE		1	1		15	15		16	16
FUEL FLOW INDICATOR					1	1		1	1
MISCELLANEOUS									
POWERPLANT FAILURE FOR UNDETERMINED REASONS	26		26	186		186	212		212
FOREIGN OBJECT DAMAGE				1		1	1		1
DETONATION				1		1	1		1
OTHER				1		1	1		1

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
REDUCTION GEAR ASSEMBLY									
COMPRESSOR ASSEMBLY									
BEARING, ROTOR SHAFT	1		1				1		1
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
BLADE, TURBINE WHEEL				1		1	1		1
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									
FUEL CONTROL				1		1	1		1
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONTROL UNIT, PCV					1	1		1	1
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL	51	6	57	466	40	506	517	46	563
** SYSTEMS **									
ELECTRICAL SYSTEM									
BATTERIES				4	4	8	4	4	8
AMMETERS/VOLTMETERS					1	1		1	1
GENERATORS/ALTERNATORS	1		1	2	2	4	3	2	5
REGULATOR				1		1	1		1
RELAYS AND WIRING	1		1	2		2	3		3
SWITCHES				1	2	3	1	2	3
PROTECTIVE DEVICES					1	1		1	1
OTHER					3	3		3	3
HYDRAULIC SYSTEM									
HYDRAULIC PUMPS	1		1	2	1	3	3	1	4
RESERVOIR, LINES, FITTINGS				6		6	6		6
SEALS				4		4	4		4
RELIEF VALVE				1		1	1		1
SHUT-OFF VALVE				1		1	1		1
OTHER				1		1	1		1
FLIGHT CONTROL SYSTEMS									
AILERON AND AILERON TAB CONTROL SYSTEM	2		2	1		1	3		3
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM	2		2	3		3	5		5
RUDDER AND RUDDER TAB CONTROL SYSTEM				4		4	4		4
WING FLAP CONTROL SYSTEM (ELECTRICAL)		1	1		1	1		2	2
WING FLAP CONTROL SYSTEM (MECHANICAL)				1		1	1		1
OTHER				1		1	1		1
ANTI-ICING, DE-ICING SYSTEMS									
EMPENNAGE ANTI-ICING, DE-ICING SYSTEMS				1		1	1		1
WINDSHIELD ANTI-ICING, DE-ICING SYSTEMS	1		1	1		1	2		2
CARBURETOR DE-ICING SYSTEM				1		1	1		1
OTHER		1	1					1	1
AIR CONDITION, HEATING AND PRESSURIZATION									
OTHER	1		1				1		1
AUTO PILOT									
FIRE WARNING SYSTEM									
POWERPLANT					1	1		1	1
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
VACUUM SYSTEM				1		1	1		1
SUBTOTAL	9	2	11	39	16	55	48	18	66
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
ALTIMETERS				1		1	1		1
AIRSPEED					2	2		2	2
DIRECTIONAL GYRO		1	1					1	1
FLUXGATE COMPASS	1		1				1		1

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

INSTRUMENTS/EQUIPMENT AND ACCESSORIES (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
TRANSMITTERS AND/OR RECEIVERS				1	1	2	1	1	2
DME					1	1		1	1
OTHER		1	1		3	3		4	4
MISCELLANEOUS EQUIPMENT									
SPRAY, DUSTING EQUIPMENT				1		1	1		1
SUBTOTAL	1	2	3	3	7	10	4	9	13
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
RUNWAY LIGHTING					11	11		11	11
RAMP FACILITIES					1	1		1	1
OBSTRUCTION LIGHTING					1	1		1	1
OTHER		1	1	1	3	4	1	4	5
AIRPORT CONDITIONS									
WET RUNWAY		1	1	3	58	61	3	59	62
ICE/SLUSH ON RUNWAY		2	2	1	28	29	1	30	31
SNOW ON RUNWAY		1	1	5	47	52	5	48	53
SNOW WINDROWS					33	33		33	33
UNMARKED OBSTRUCTIONS					7	7		7	7
SOFT SHOULDERS (RUNWAY)				1	17	18	1	17	18
GLASSY WATER					3	3		3	3
ROUGH WATER		1	1		1	1		2	2
HIGH VEGETATION		1	1	4	12	16	4	13	17
HIDDEN HAZARD				5	6	11	5	6	11
POORLY MAINTAINED RUNWAY SURFACE				1	20	21	1	20	21
SOFT RUNWAY		1	1	1	28	29	1	29	30
WET RAMP/TAXIWAY					1	1		1	1
ICE/SLUSH ON RAMP/TAXIWAY					1	1		1	1
SNOW ON RAMP/TAXIWAY				1	3	4	1	3	4
POORLY MAINTAINED RAMP/TAXIWAY SURFACE				1		1	1		1
OTHER		2	2	5	56	61	5	58	63
AIRWAYS FACILITIES									
H FACILITY		1	1					1	1
OTHER		1	1					1	1
SUBTOTAL		12	12	29	337	366	29	349	378
** WEATHER **									
LOW CEILING	1	167	168		64	64	1	231	232
RAIN		47	47		40	40		87	87
FOG		118	118		52	52		170	170
SNOW		29	29		22	22		51	51
ICING CONDITIONS-INCLUDES SLEET, FREEZING RAIN, ETC	2	30	32	1	16	17	3	46	49
CONDITIONS CONDUCIVE TO CARB/INDUCTION SYSTEM ICING		5	5		50	50		55	55
UNFAVORABLE WIND CONDITIONS		14	14	15	219	234	15	233	248
WIND SHEAR		2	2	1	10	11	1	12	13
SUDDEN WINDSHIFT				6	14	20	6	14	20
TURBULENCE IN FLIGHT, CLEAR AIR		1	1		3	3		4	4
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS	1	18	19	2	3	5	3	21	24
DOWNDRAFTS, UPDRAFTS	1	8	9	4	47	51	5	55	60
LOCAL WHIRLWIND				5	3	8	5	3	8
TORNADO	1	2	3				1	2	3
SQUALL LINE		2	2		1	1		3	3
ADVERSE WINDS ALOFT					1	1		1	1
HIGH TEMPERATURE		2	2		3	3		5	5
OBSTRUCTIONS TO VISION		5	5		7	7		12	12
HIGH DENSITY ALTITUDE		15	15		56	56		71	71
THUNDERSTORM ACTIVITY		32	32	1	17	18	1	49	50
OTHER		4	4		3	3		7	7
SUBTOTAL	6	501	507	35	631	666	41	1132	1173
** TERRAIN **									
WET, SOFT GROUND		1	1	18	123	141	18	124	142
SNOW-COVERED		4	4	7	25	32	7	29	36
ICY					2	2		2	2
HIGH VEGETATION		1	1	8	54	62	8	55	63
HIDDEN OBSTRUCTIONS				5	16	21	5	16	21
ROUGH/UNEVEN		11	11	28	155	183	28	166	194
ROUGH WATER		1	1		5	5		6	6
GLASSY WATER					1	1		1	1

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

TERRAIN (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
HIGH OBSTRUCTIONS	1	70	71	20	239	258	21	308	329
LOOSE GRAVEL					7	7		7	7
SANDY				3	13	16	3	13	16
OTHER		3	3	5	34	39	5	37	42
SUBTOTAL	1	91	92	94	673	767	95	764	859
** MISCELLANEOUS **									
FOREIGN OBJECT DAMAGE				1	2	3	1	2	3
SMOKE IN COCKPIT		1	1	4	7	11	4	8	12
				1		1	1		1
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	5	1	6	27	1	28	32	2	34
UNDETERMINED	49		49	36		36	85		85
BIRD COLLISION				1		1	1		1
VORTEX TURBULENCE	3		3	7	2	9	10	2	12
PROP/JET/ROTOR BLAST				4		4	4		4
ANIMAL(S) ON RUNWAY/TAXIWAY/RAMP				9	2	11	9	2	11
EVASIVE MANEUVER TO AVOID COLLISION	3	1	4	24	9	33	27	10	37
UNQUALIFIED PERSON OPERATED AIRCRAFT	3	1	4	5	6	11	8	7	15
DIRECT ENTRIES	2		2	4		4	6		6
SUBTOTAL	65	4	69	123	29	152	188	33	221
GRAND TOTAL	1002	821	1823	4602	2057	6659	5604	2878	8482
** MISCELLANEOUS ACTS, CONDITIONS **									
FIRE OF UNDETERMINED ORIGIN					6	6		6	6
UNAPPROVED MODIFICATION		1	1	2	1	3	2	2	4
IMPROPER/INADEQUATE VENTING				1		1	1		1
POOR WELD	1		1	6		6	7		7
PREVIOUS DAMAGE	1		1	4	1	5	5	1	6
BRAKES FROZEN				1	1	2	1	1	2
LEAK/LEAKAGE	1	3	4	26	1	27	27	4	31
LOW FLUID LEVEL				4	2	6	4	2	6
CIRCUIT BREAKER POPPED					6	6		6	6
ARCING	1		1	1		1	2		2
LOW COMPRESSION		1	1	5	1	6	5	2	7
RUNWAY CLOSED					6	6		6	6
DOWNWIND		4	4		66	66		70	70
CARBON DEPOSITS				3	1	4	3	1	4
LANDED IN CONSTRUCTION AREA					2	2		2	2
OVER TORQUED				1		1	1		1
UNDER TORQUED	1		1	1		1	2		2
LOOSE, PART/FITTING	2	1	3	21	4	25	23	5	28
BENT				3	1	4	3	1	4
BINDING				8	3	11	8	3	11
BURST				3		3	3		3
BURNED					1	1		1	1
CHAFFED		1	1	2		2	2	1	3
COLLAPSED	1		1	4		4	5		5
CROSSED	1		1				1		1
DETERIORATED				2		2	2		2
DISCONNECTED				27	1	28	27	1	28
DISTORTED				1		1	1		1
ELONGATED				2		2	2		2
EXCESSIVE-WEAR/PLAY		1	1	11	3	14	11	4	15
ERRATIC		2	2		14	14		16	16
FLUTTER	1		1	1		1	2		2
FRAYED				3		3	3		3
GROUNDED				2	1	3	2	1	3
HIGH VOLTAGE BREAKDOWN				1		1	1		1
IMPROPERLY INSTALLED	5		5	17		17	22		22
JAMMED				9		9	9		9
OBSTRUCTED	2		2	25	1	26	27	1	28
OPEN					1	1		1	1
OVERHEATED	1		1	5	1	6	6	1	7
PINCHED					1	1		1	1
EXCESSIVE PRESSURE				6	1	7	6	1	7
PRESSURE TOO LOW				7	2	9	7	2	9
PRESSURE, NONE				2		2	2		2
SCORED				2		2	2		2
SHEARED				3		3	3		3
STICKING				1		1	1		1
STRIPPED				2		2	2		2

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MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
STUCK				5	1	6	5	1	6
VIBRATION, EXCESSIVE				2	3	5	2	3	5
WARPED				2		2	2		2
CONGESTED RAMP/TAXIWAY					1	1		1	1
ICE-INDUCTION	1		1	2		2	3		3
FIRE IN WING				1		1	1		1
LOAD NOT JETTISONED				1	7	8	1	7	8
FAILED TO USE LANDING LIGHT(S)				1		1	1		1
INTENTIONAL GROUND-WATER LOOP-SWERVE				6	9	15	6	9	15
INTENTIONAL WHEELS UP				20	3	23	20	3	23
RAN OFF END OF RUNWAY		1	1		125	125		126	126
ALTIMETER SETTING-INCORRECT	1	1	2				1	1	2
ANTI-ICING/DEICING EQUIP-IMPROPER OPER, OF/FAILED TO USE	3	1	4	49	1	50	52	2	54
CHECKLIST-FAILED TO USE		1	1		6	6		7	7
CREW COORDINATION-POOR					1	1		1	1
DISREGARD OF GOOD OPERATING PRACTICE	3	1	4	4	3	7	7	4	11
IMPROPER EMERGENCY PROCEDURES	5		5	14	3	17	19	3	22
FEATHERED WRONG ENGINE				2		2	2		2
INSTRUMENTS-MISREAD OR FAILED TO READ				2	1	3	2	1	3
SEAT BELT NOT FASTENED		1	1	1		1	1	1	2
NOT ALLIGNED WITH RUNWAY/INTENDED LANDING AREA				14	24	38	14	24	38
UNWARRANTED LOW FLYING	18	35	53	12	12	24	30	47	77
FAILED TO EXTEND THE LANDING FLAPS	1		1		1	1	1	1	2
FAILED TO USE ALL AVAILABLE RUNWAY	1	1	2	4	3	7	5	4	9
LANDED AT WRONG AIRPORT					5	5		5	5
INATTENTIVE TO FUEL SUPPLY	1		1	35	4	39	36	4	40
FLEW INTO BLIND CANYON	7		7	8	1	9	15	1	16
PREMATURE FLAP RETRACTION					2	2		2	2
POORLY PLANNED APPROACH		2	2	1	13	14	1	15	16
MISCALCULATED FUEL CONSUMPTION				27	5	32	27	5	32
JETTISONED LOAD					10	10		10	10
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT		10	10		19	19		29	29
LANDED ON FOAMED RUNWAY					3	3		3	3
IMPROPERLY SECURED		1	1	13	2	15	13	3	16
COMMUNICATIONS FAILURE					1	1		1	1
ELECTRICAL FAILURE	1		1	2	7	9	3	7	10
ENGINE LOADED UP				13	2	15	13	2	15
EXPLOSIVE DECOMPRESSION					1	1		1	1
FATIGUE FRACTURE	8		8	17	1	18	25	1	26
HYDRAULIC FAILURE				5		5	5		5
IMPROPER GRADE OIL-LUBRICATING SYSTEM	1		1	1		1	2		2
RPM-UNCONTROLLABLE-OVERSPEED				1		1	1		1
WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION				1	10	11	1	10	11
WRONG PART	3		3	6		6	9		9
IMPROPER ALIGNMENT/ADJUSTMENT		1	1	22	10	32	22	11	33
FAILURE OF TWO OR MORE ENGINES				1	12	13	1	12	13
SEPARATION IN FLIGHT		26	26		5	5		31	31
FIRE IN CABIN/ COCKPIT/ BAGGAGE COMPARTMENT		2	2	2	6	8	2	8	10
FIRE IN ENGINE	2	2	4	5	7	12	7	9	16
FIRE IN BRAKES/ WHEEL ASSEMBLY/ WHEEL WELL	1		1				1		1
CORRODED/CORROSION	1		1	7	1	8	8	1	9
INCORRECT TRIM SETTING	2	2	4	1	1	2	3	3	6
CARGO SHIFTED	1		1				1		1
PILOT FATIGUE	1	13	14		11	11	1	24	25
FUEL EXHAUSTION	7		7	196		196	203		203
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL	1	2	3	8	2	10	9	4	13
PILOT SUFFERED HEART ATTACK	2	1	3				2	1	3
ALCOHOLIC IMPAIRMENT OF EFFICIENCY AND JUDGMENT	15	15	30	3	1	4	18	16	34
HYPOXIA	1		1				1		1
CARBON MONOXIDE POISONING		1	1					1	1
ICE-IN FUEL				6		6	6		6
ICE-ENGINE				1		1	1		1
ICE-CARBURETOR	2		2	49		49	51		51
AIRFRAME ICE	15	5	20	13	11	24	28	16	44
ICE-WINDSHIELD	1	2	3	1	6	7	2	8	10
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	5	14	19	7	11	18	12	25	37
INTERFERENCE WITH FLIGHT CONTROLS	1		1	7	2	9	8	2	10
WHITEOUT		1	1		4	4		5	5
SUNGLARE		7	7		16	16		23	23
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM	3		3	6	1	7	9	1	10
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM	2		2	22	1	23	24	1	25
SIMULATED CONDITIONS		2	2		25	25		27	27
FUEL SIPHONING				2		2	2		2
WATER IN FUEL	7	1	8	50	2	52	57	3	60
AIRCRAFT CAME TO REST IN WATER		39	39		74	74		113	113
FROZEN, MOISTURE		1	1	1	1	2	1	2	3

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CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)(CONTINU

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
MISSING		1	1	15	2	17	15	3	18
TOUCH AND GO LANDING		8	8		87	87		95	95
HYDROPLANING ON WET RUNWAY				2	8	10	2	8	10
OVERLOAD FAILURE	5	14	19	4	316	320	9	330	339
MATERIAL FAILURE	12		12	159	11	170	171	11	182
FUEL STARVATION	11		11	103		103	114		114
OIL STARVATION				2		2	2		2
IMPROPER CLEARANCE-TOLERANCE	1		1	1		1	2		2
FUEL SELECTOR POSITIONED BETWEEN TANKS				6	1	7	6	1	7

DIRECT ENTRY CAUSES

PILOT-FAILED TO MAINTAIN ADEQUATE SEPARATION
PILOT-FAILED TO MAINTAIN ADEQUATE SEPARATION
MISC-SPIN CHUTE FAILED TO RELEASE
MISC-FUEL STARVATION FOR UNDETERMINED REASON.
PILOT-FAILED TO MAINTAIN ADEQUATE SEPARATION
MISC-ACCIDENTAL FIRING OF FLARE PISTOL IN FLT.
PILOT-FAILED TO MAINTAIN POSITIVE RATE OF CLIMB
MISC-COLLIDED WITH RADIO CONTROLLED MODEL ACFT
PILOT-FAILED TO MAINTAIN POSITIVE RATE OF CLIMB
PERSONNEL-ACFT TIED DWN W/CHAINS DRG WND GSTNG 75K
MISC-FUEL EXHAUSTION FOR UNDETERMINED REASON
MISC-FUEL STARVATION FOR UNDTRMD RSN.

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

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ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
SMALL FIXED WING

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL							
DUAL	20	12	25	129	186	185	5.08
SOLO	5	10	15	138	168	167	4.59
CHECK	3	2	4	8	17	17	.46
TRAINING	11	5	17	76	109	108	2.98
NONCOMMERCIAL							
PLEASURE	386	182	318	1083	1969	1961	53.81
PRACTICE	17	7	14	89	127	127	3.47
BUSINESS	53	21	23	138	235	234	6.42
CORPORATE/EXECUTIVE	13	2	6	39	60	60	1.64
AERIAL SURVEY	2	2		5	9	9	.25
COMPANY FLIGHT							
OTHER	1		1	5	7	7	.19
COMMERCIAL							
AERIAL APPLICATION	15	33	41	77	166	166	4.54
CROP CONTROL RELATED FLIGHT	7	8	17	118	150	150	4.10
FIRE CONTROL							
FIRE CONTROL RELATED FLIGHT				1	1	1	.03
AERIAL MAPPING/PHOTOGRAPHY	2		1	4	7	7	.19
AERIAL ADVERTISING	2	2	2	7	13	13	.36
POWER AND PIPELINE PATROL	2	1		3	6	6	.16
FISH SPOTTING				5	5	5	.14
AIR TAXI-PASSENGER OPERATIONS	31	14	14	59	118	118	3.22
AIR TAXI-CARGO OPERATIONS	10	8	12	43	73	72	2.00
CONSTRUCTION WORK							
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE	1						
INTRA-STATE CHARTER PASSG.	1	1		1	1	1	.03
INTRA-STATE CHARTER CARGO.					3	3	.08
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC							
CHARTER PASSG-DOMESTIC	2						
CHARTER-CARGO-INTERNATIONAL					2	2	.05
CHARTER-PASSG-INTERNATIONAL							
OTHER	2	1	3	2			
UNKNOWN/NOT REPORTED				1	8	8	.22
					1	1	.03

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
MISCELLANEOUS					2	2	.05
EXPERIMENTATION		2			42	41	1.15
TEST	7	5	8	22	11	11	.30
DEMONSTRATION	1		3	7	78	77	2.13
FERRY	14	3	8	53	5	5	.14
SEARCH AND RESCUE	2	1		2	2	2	.05
AIR SHOW/AIR RACING	1	1			10	10	.27
PARACHUTE JUMP	1		3	6	1	1	.03
PARACHUTE JUMP-AIR SHOW	1				6	6	.16
TOWING GLIDERS				6	1	1	.03
SEEDING CLOUDS				1	6	6	.16
HUNTING	2	2		2			
POLICE PATROL					2	2	.05
HIGHWAY TRAFFIC ADVISORY		1	1		4	4	.11
ALL OTHER PUBLIC FLYING	3			1	31	31	.85
OTHER	10	2	3	16	17	17	.46
UNKNOWN/NOT REPORTED	8			9			
RECORDS	636	328	539	2156	3659		
ACCIDENTS	623	326	537	2136		3622	
PERCENTS	17.4	9.0	14.7	58.9			

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
SMALL FIXED WING

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	579	312	485	2283		3659
COPILOT	39	7	9	57		112
DUAL STUDENT	16	15	29	139		199
CHECK PILOT	1	3	3	10		17
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW	3	1	5	1		1
PASSENGERS	614	256	425	6		15
				1933		3228
TOTAL	1252	594	956	4429	ABOARD	7231
* OTHER AIRCRAFT				4		4
OTHER GROUND	8	7	18	9		42
GRAND TOTAL	1260	601	974	4442		7277

INVOLVES 3622 TOTAL ACCIDENTS
INVOLVES 623 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

GENERAL AVIATION ACCIDENTS

LARGE FIXED-WING AIRCRAFT

ANALYTIC TABLE

FIRST TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
LARGE FIXED WING

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE	1	6			7	7	17.95
DRAGGED WINGTIP POD OR FLOAT							
WHEELS-UP LANDING		1			1	1	2.56
WHEELS-DOWN LANDING IN WATER							
GEAR COLLAPSED		1			1	1	2.56
GEAR RETRACTED							
HARD LANDING		3			3	3	7.69
NOSE OVER/DOWN		1			1	1	2.56
ROLL OVER							
OVERSHOOT	1	1			2	2	5.13
UNDERSHOOT		1			1	1	2.56
COLLISION BETWEEN AIRCRAFT							
BOTH IN FLIGHT		1			1	1	2.56
ONE AIRBORNE							
BOTH ON GROUND							
COLLISION WITH GROUND/WATER							
CONTROLLED							
UNCONTROLLED							
COLLIDED WITH							
WIRES/POLES							
TREES	2				2	2	5.13
RESIDENCE/S							
BUILDING/S							
FENCE, FENCEPOSTS							
ELECTRONIC TOWERS							
RUNWAY OR APPROACH LIGHTS							
AIRPORT HAZARD							
ANIMALS	1				1	1	2.56
CROP							
FLAGMAN LOADER							
DITCHES							
SNOWBANK							
PARKED AIRCRAFT (UNATTENDED)		1			1	1	2.56
AUTOMOBILE							
DIRT BANK	2				2	2	5.13
OTHER		1			1	1	2.56
BIRD STRIKE							

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STALL	1				1	1	2.56
SPIN	1				1	1	2.56
SPIRAL							
MUSH		1			1	1	2.56
FIRE OR EXPLOSION							
IN FLIGHT							
ON GROUND							
AIRFRAME FAILURE							
IN FLIGHT							
ON GROUND							
ENGINE TEARAWAY							
ENGINE FAILURE OR MALFUNCTION	7	5			12	12	30.77
PROPELLER/ROTOR FAILURE							
PROPELLER							
TAIL ROTOR							
MAIN ROTOR							
PROP ROTOR ACONT TO PERSON							
JET INTAKE/EXH ACONT TO PERS							
PROPELLER/JET/ROTOR BLAST							
TURBULENCE							
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE							
EVASIVE MANEUVER							
UNCONTROLLED ALT DEVIATION							
DITCHING							
MISSING ACFT NOT RECOVERED							
MISCELLANEOUS/OTHER							
UNDETERMINED							
RECORDS	16	23			39		
ACCIDENTS	16	23				39	
PERCENTS	41.0	59.0	.0	.0			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

FIRST PHASE OF OPERATION BY INJURY INDEX
LARGE FIXED WING

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STATIC							
STARTING ENGINE/S							
IDLING ENGINE/S							
ENGINE RUNUP							
IDLING ROTORS							
PARKED-ENGINES NOT OPERATING							
OTHER							
TAXI							
TO TAKEOFF							
FROM LANDING							
OTHER							
GROUND TAXI TO TAKEOFF							
GROUND TAXI FROM LANDING							
GROUND TAXI, OTHER							
AERIAL TAXI TO TAKEOFF							
AERIAL TAXI TO/FROM LANDING							
AERIAL TAXI, OTHER							
TAKEOFF							
RUN		1	2		3	3	7.69
INITIAL CLIMB	5		2		7	7	17.95
VERTICAL							
RUNNING (ROTORCRAFT/VTOL-STOL)							
ABORTED (FIXED-WING)			1		1	1	2.56
ABORTED (ROTORCRAFT/VTOL)							
ABORTED (ROTORCRAFT/STOL)							
OTHER							
INFLIGHT							
CLIMB TO CRUISE			1		1	1	2.56
NORMAL CRUISE	4		3		7	7	17.95
DESCENDING			1		1	1	2.56
HOLDING (IFR)							
HOVERING							
POWER-ON DESCENT (ROTORCRAFT)							
AUTOROTATIVE DESCENT							
ACROBATICS							
BUZZING							
UNCONTROLLED DESCENT							

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EMERGENCY DESCENT							
LOW PASS							
OTHER							
EN ROUTE TO TREAT CROP							
EN ROUTE TO RELOADING AREA							
SURVEY FIELD/AREA							
STARTING SWATH RUN							
SWATH RUN		1			1	1	2.56
FLAREOUT FOR SWATH RUN							
PULLUP FROM SWATH RUN							
PROCEDURE TURNAROUND							
CLEANUP SWATH							
MANEUVER TO AVOID OBSTRUCTION							
RETURN TO STRIP							
LANDING							
TRAFFIC PATTERN-CIRCLING	2				2	2	5.13
FINAL APPROACH (VFR)				2	2	2	5.13
INITIAL APPROACH							
FINAL APPROACH (IFR)	1				1	1	2.56
LEVEL OFF/TOUCHDOWN			1	4	5	5	12.82
ROLL (FIXED WING)			1	5	6	6	15.38
ROLL-ON/RUN-ON (ROTORCRAFT)							
POWER-ON LANDING (ROTORCRAFT)							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUND (VFR)	1				1	1	2.56
MISSED APPROACH (IFR)							
OTHER							
UNKNOWN/NOT REPORTED				1	1	1	2.56
RECORDS	13	2	3	21	39		
ACCIDENTS	13	2	3	21		39	
PERCENTS	33.3	5.1	7.7	53.8			

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

LARGE FIXED WING

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 39 TOTAL ACCIDENTS

INVOLVES 13 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	11 84.62	3 23.08	12 92.31	22 84.62	4 15.38	22 84.62	33 84.62	7 17.95	34 87.18
PERSONNEL	2 15.38	3 23.08	5 38.46	2 7.69	1 3.85	2 7.69	4 10.26	4 10.26	7 17.95
AIRFRAME	.00	.00	.00	.00	.00	.00	.00	.00	.00
LANDING GEAR	.00	.00	.00	2 7.69	.00	2 7.69	2 5.13	.00	2 5.13
POWERPLANT	3 23.08	.00	3 23.08	3 11.54	2 7.69	5 19.23	6 15.38	2 5.13	8 20.51
SYSTEMS	.00	.00	.00	.00	.00	.00	.00	.00	.00
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	1 7.69	1 7.69	.00	.00	.00	.00	1 2.56	1 2.56
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORT/AIRWAYS/FACILITIES	.00	.00	.00	.00	7 26.92	7 26.92	.00	7 17.95	7 17.95
WEATHER	.00	2 15.38	2 15.38	.00	3 11.54	3 11.54	.00	5 12.82	5 12.82
TERRAIN	.00	.00	.00	.00	3 11.54	3 11.54	.00	3 7.69	3 7.69
MISCELLANEOUS	.00	.00	.00	.00	.00	.00	.00	.00	.00
UNDETERMINED	.00	.00	.00	.00	.00	.00	.00	.00	.00

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

LARGE FIXED WING

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 39 TOTAL ACCIDENTS

INVOLVES 13 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND	2		2	1		1	3		3
BECAME LOST/DISORIENTED	1		1				1		1
FAILED TO SEE AND AVOID OTHER AIRCRAFT				2		2	2		2
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	1		1				1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	1		1	1		1	2		2
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE	2	1	3				2	1	3
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC				1		1	1		1
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				2		2	2		2
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS	1		1				1		1
PREMATURE LIFT OFF				2		2	2		2
IMPROPER LEVEL OFF	1		1				1		1
IMPROPER IFR OPERATION	1		1				1		1
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				2		2	2		2
IMPROPER COMPENSATION FOR WIND CONDITIONS	2		2	4		6	6		8
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING		1	1		2	2		3	3
LACK OF FAMILIARITY WITH AIRCRAFT				2		2	2		2
MISMANAGEMENT OF FUEL				3		3	3		3
SELECTED UNSUITABLE TERRAIN	1		1				1		1
CONTROL INTERFERENCE		1	1					1	1
SPONTANEOUS-IMPROPER ACTION				2		2	2		2
MISJUDGED DISTANCE AND SPEED				1		1	1		1
MISJUDGED ALTITUDE AND CLEARANCE	1		1				1		1
MISJUDGED ALTITUDE				1		1	1		1
IMPROPER RECOVERY FROM BOUNCED LANDING				3		3	3		3
FAILED TO MAINTAIN DIRECTIONAL CONTROL					1	1		1	1
SELECTED WRONG RUNWAY RELATIVE TO EXISTING WIND	1		1	2		2	3		3
FAILED TO ABORT TAKEOFF				2		2	2		2
FAILED TO INITIATE GO-AROUND									
SUBTOTAL	15	3	18	33	3	36	48	6	54
COPILOT					1	1		1	1
LACK OF FAMILIARITY WITH AIRCRAFT					1	1		1	1
SUBTOTAL									
** PERSONNEL **									
RULES, REGULATIONS, STANDARDS PERSONNEL									
FLIGHT INSTRUCTOR							1		1
MAINTENANCE, SERVICING, INSPECTION	1		1	1		1	1		1
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)									
INADEQUATE MAINTENANCE AND INSPECTION					1	1		1	1
OPERATIONAL SUPERVISORY PERSONNEL								1	1
INADEQUATE FLIGHT TRAINING-PROCEDURES		1	1			1	1		1
INADEQUATE GROUND TRAINING-PROCEDURES				1					
DEFICIENCY, COMPANY MAINTAINED FOMT, SERV, REGULATIONS									
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL								1	1
AIRWAYS FACILITIES PERSONNEL								1	1
PRODUCTION-DESIGN-PERSONNEL		1	1						
POOR/INADEQUATE DESIGN		1	1				1		1
OTHER									
MISCELLANEOUS-PERSONNEL	1		1						
PILOT OF OTHER AIRCRAFT									
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	2	3	5	2	1	3	4	4	8
** AIRFRAME **									

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

AIRFRAME (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
WINGS									
FUSELAGE									
LANDING GEAR									
MAIN GEAR-SHOCK ABSORBING ASSY, STRUTS, ATTACHMENTS, ETC				1		1	1		1
NORMAL RETRACTION/EXTENSION ASSEMBLY				1		1	1		1
FLIGHT CONTROL SURFACES									
SUBTOTAL				2		2	2		2
** POWERPLANT **									
ENGINE STRUCTURE									
MASTER AND CONNECTING RODS									
PISTON, PISTON RINGS	1		1				1		1
IGNITION SYSTEM	1		1				1		1
FUEL SYSTEM									
CARBURETOR	1		1				1		1
LUBRICATING SYSTEM									
OIL COOLERS				1		1	1		1
COOLING SYSTEM									
PROPELLER AND ACCESSORIES				1		1	1		1
GOVERNORS									
EXHAUST SYSTEM				1		1	1		1
ENGINE ACCESSORIES									
ENGINE CONTROLS									
POWERPLANT-INSTRUMENTS									
FUEL QUANTITY GAUGE									
MISCELLANEOUS					2	2		2	2
POWERPLANT FAILURE FOR UNDETERMINED REASONS									
DETONATION				1		1	1		1
REDUCTION GEAR ASSEMBLY				1		1	1		1
COMPRESSOR ASSEMBLY									
COMBUSTION ASSEMBLY									
TURBINE ASSEMBLY									
ACCESSORY DRIVE ASSEMBLY									
LUBRICATING SYSTEM									
FUEL SYSTEM									
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
OTHER									
CONSTANT SPEED DRIVE	1		1				1		1
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL	4		4	4	2	6	8	2	10
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
LORAN RECEIVER									
OTHER	1	1					1	1	
MISCELLANEOUS EQUIPMENT	1	1					1	1	
SUBTOTAL	2	2					2	2	
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
AIRPORT CONDITIONS									
WET RUNWAY									
ICE/SLUSH ON RUNWAY				1	1		1	1	
SNOW WINDROWS				2	2		2	2	
SOFT SHOULDERS (RUNWAY)				1	1		1	1	
POORLY MAINTAINED RUNWAY SURFACE				1	1		1	1	
OTHER				2	2		2	2	
AIRWAYS FACILITIES				1	1		1	1	
SUBTOTAL				8	8		8	8	

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** WEATHER **								1	1
LOW CEILING		1	1					2	2
FOG		2	2					1	1
SNOW		1	1					3	3
UNFAVORABLE WIND CONDITIONS					3	3			
SUBTOTAL		4	4		3	3		7	7
** TERRAIN **									
WET, SOFT GROUND					2	2		2	2
HIGH VEGETATION					1	1		1	1
SUBTOTAL					3	3		3	3
GRAND TOTAL	21	12	33	41	21	62	62	33	95
** MISCELLANEOUS ACTS, CONDITIONS **									
LEAK/LEAKAGE	1		1				1		1
DOWNWIND					1	1		1	1
ERRATIC					1	1		1	1
INTENTIONAL GROUND-WATER LOOP-SWERVE					1	1		1	1
INTENTIONAL WHEELS UP		1	1	3	1	4	3	2	5
RAN OFF END OF RUNWAY					1	1		1	1
CHECKLIST-FAILED TO USE					1	1		1	1
CREW COORDINATION-POOR					1	1		1	1
IMPROPER EMERGENCY PROCEDURES	1		1				1		1
GUST LOCKS ENGAGED					1	1		1	1
FAILED TO USE ALL AVAILABLE RUNWAY					1	1		1	1
MISCALCULATED FUEL CONSUMPTION				1		1	1		1
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT		1	1					1	1
LANDED ON FOAMED RUNWAY					1	1		1	1
COMMUNICATIONS FAILURE		1	1					2	2
ELECTRICAL FAILURE		1	1		1	1	1		1
FATIGUE FRACTURE	1		1				1		1
FUEL GRADE-IMPROPER				1		1	1		1
WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION					1	1		1	1
IMPROPER ALIGNMENT/ADJUSTMENT		1	1		1	1		2	2
FAILURE OF TWO OR MORE ENGINES	1		1				1		1
CORRODED/CORROSION	1		1				1		1
CARGO SHIFTED	2		2	2		2	4		4
FUEL EXHAUSTION				1		1	1		1
AIRFRAME ICE	1		1	2		2	3		3
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG				1		1	1		1
SUNGLARE				1		1	1		1
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM				1		1	1		1
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM				1		1	1		1
OIL CONTAMINATION		3	3		1	1		4	4
AIRCRAFT CAME TO REST IN WATER					3	3		3	3
OVERLOAD FAILURE	1		1	1		1	2		2
MATERIAL FAILURE				1		1	1		1
FUEL STARVATION									

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
LARGE FIXED WING

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL							
DUAL							
SOLO							
CHECK							
TRAINING	1						
NONCOMMERCIAL				1	1	1	2.56
PLEASURE				1	1	1	2.56
PRACTICE							
BUSINESS				4	4	4	10.26
CORPORATE/EXECUTIVE				1			
AERIAL SURVEY	1		1	4	1	1	2.56
COMPANY FLIGHT					6	6	15.38
OTHER							
COMMERCIAL	1			1			
AERIAL APPLICATION					2	2	5.13
CROP CONTROL RELATED FLIGHT		1					
FIRE CONTROL				1	1	1	2.56
FIRE CONTROL RELATED FLIGHT					1	1	2.56
AERIAL MAPPING/PHOTOGRAPHY	1						
AERIAL ADVERTISING					1	1	2.56
POWER AND PIPELINE PATROL							
FISH SPOTTING							
AIR TAXI-PASSENGER OPERATIONS	1	1	1				
AIR TAXI-CARGO OPERATIONS	2		2		3	3	7.69
CONSTRUCTION WORK					4	4	10.26
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC							
CHARTER PASSG-DOMESTIC							
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL							
OTHER							
UNKNOWN/NOT REPORTED			1		1	1	2.56

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ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
MISCELLANEOUS							
EXPERIMENTATION			1		1	1	2.56
TEST		1			1	1	2.56
DEMONSTRATION							
FERRY	1			3	4	4	10.26
SEARCH AND RESCUE							
AIR SHOW/AIR RACING							
PARACHUTE JUMP							
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS							
SEEDING CLOUDS							
HUNTING							
POLICE PATROL							
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING							
OTHER	2			1	3	3	7.69
UNKNOWN/NOT REPORTED	3			1	4	4	10.26
RECORDS	13	2	3	21	39		
ACCIDENTS	13	2	3	21		39	
PERCENTS	33.3	5.1	7.7	53.8			

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INJURIES.ACCIDENTS
LARGE FIXED WING

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	11	3		25		39
COPILOT	10	1		21		32
DUAL STUDENT						
CHECK PILOT		1				1
FLIGHT ENGINEER			1	2		3
NAVIGATOR						
CABIN ATTENDANT				2		2
EXTRA CREW	1			1		2
PASSENGERS	15	4	4	41		64
TOTAL	37	9	5	92	ABOARD	143
* OTHER AIRCRAFT	1					1
OTHER GROUND			1			1
GRAND TOTAL	38	9	6	92		145

INVOLVES 39 TOTAL ACCIDENTS
INVOLVES 13 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

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GENERAL AVIATION ACCIDENTS

ROTORCRAFT

ANALYTIC TABLE

FIRST TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
ROTORCRAFT

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE							
DRAGGED WINGTIP POD OR FLOAT							
WHEELS-UP LANDING							
WHEELS-DOWN LANDING IN WATER							
GEAR COLLAPSED		1					
GEAR RETRACTED					1	1	.35
HARD LANDING		4	25				
NOSE OVER/DOWN		1			29	29	10.03
ROLL OVER		2	17		1	1	.35
OVERSHOOT					19	19	6.57
UNDERSHOOT							
COLLISION BETWEEN AIRCRAFT							
BOTH IN FLIGHT		1					
ONE AIRBORNE					1	1	.35
BOTH ON GROUND							
COLLISION WITH GROUND/WATER							
CONTROLLED		10	19				
UNCONTROLLED		6	8		29	29	10.03
COLLIDED WITH					14	14	4.84
WIRES/POLES		11	17				
TREES		2	7		28	28	9.69
RESIDENCE/S					9	9	3.11
BUILDING/S		1	1				
FENCE, FENCEPOSTS			2		2	2	.69
ELECTRONIC TOWERS		1	1		2	2	.69
RUNWAY OR APPROACH LIGHTS					2	2	.69
AIRPORT HAZARD							
ANIMALS							
CROP		2					
FLAGMAN LOADER				1	2	2	.69
DITCHES					1	1	.35
SNOWBANK			1				
PARKED AIRCRAFT (UNATTENDED)					1	1	.35
AUTOMOBILE							
DIRT BANK							
OTHER							
BIRD STRIKE		2	8		10	10	3.46

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECURDS	ACCIDENTS	PERCENT
STALL		1			1	1	.35
SPIN							
SPIRAL							
MUSH		1			1	1	.35
FIRE OR EXPLOSION							
IN FLIGHT							
ON GROUND							
AIRFRAME FAILURE							
IN FLIGHT	7	6			13	13	4.50
ON GROUND	2	1			3	3	1.04
ENGINE TEARAWAY							
ENGINE FAILURE OR MALFUNCTION	10	67			77	77	26.64
PROPELLER/ROTOR FAILURE							
PROPELLER	1	1			2	2	.69
TAIL ROTOR	4	15			19	19	6.57
MAIN ROTOR	3	10			13	13	4.50
PROP ROTOR ACONT TO PERSON				1	1	1	.35
JET INTAKE/EXH ACONT TO PERS							
PROPELLER/JET/ROTOR BLAST							
TURBULENCE	1	1			2	2	.69
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE							
EVASIVE MANEUVER							
UNCONTROLLED ALT DEVIATION							
DITCHING							
MISSING ACFT NOT RECOVERED							
MISCELLANEOUS/OTHER		4	1		5	5	1.73
UNDETERMINED		1			1	1	.35
RECORDS	72	214	2	1	289		
ACCIDENTS	72	214	2	1		289	
PERCENTS	24.9	74.0	.7	.3			

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ANALYTIC TABLE

FIRST PHASE OF OPERATION BY INJURY INDEX
ROTORCRAFT

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STATIC							
STARTING ENGINE/S				1	1	1	.35
IDLING ENGINE/S							
ENGINE RUNUP							
IDLING ROTORS		2			2	2	.69
PARKED-ENGINES NOT OPERATING							
OTHER				1	1	1	.35
TAXI							
TO TAKEOFF							
FROM LANDING							
OTHER			1		1	1	.35
GROUND TAXI TO TAKEOFF							
GROUND TAXI FROM LANDING				1	1	1	.35
GROUND TAXI, OTHER				1	1	1	.35
AERIAL TAXI TO TAKEOFF				1	1	1	.35
AERIAL TAXI TO/FROM LANDING				3	3	3	1.04
AERIAL TAXI, OTHER		1		2	3	3	1.04
TAKEOFF							
RUN							
INITIAL CLIMB	2	3	5	7	17	17	5.88
VERTICAL	1	5	5	23	34	34	11.76
RUNNING (ROTORCRAFT/VTOL-STOL)							
ABORTED (FIXED-WING)							
ABORTED (ROTORCRAFT/VTOL)							
ABORTED (ROTORCRAFT/STOL)				1	1	1	.35
OTHER							
INFLIGHT							
CLIMB TO CRUISE	2		1		3	3	1.04
NORMAL CRUISE	14	5	12	32	63	63	21.80
DESCENDING			1	1	2	2	.69
HOLDING (IFR)							
HOVERING	4	2	3	8	17	17	5.88
POWER-ON DESCENT (ROTORCRAFT)		1			1	1	.35
AUTOROTATIVE DESCENT	1			1	2	2	.69
ACROBATICS							
BUZZING							
UNCONTROLLED DESCENT	5				5	5	1.73

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ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE			RECORDS	ACCIDENTS	PERCENT
EMERGENCY DESCENT									
LOW PASS	3			2			5	5	1.73
OTHER	3	2	1	7			13	13	4.50
EN ROUTE TO TREAT CROP		1	1	2			4	4	1.38
EN ROUTE TO RELOADING AREA			1	2			3	3	1.04
SURVEY FIELD/AREA			1	1			2	2	.69
STARTING SWATH RUN	1		1	2			4	4	1.38
SWATH RUN		6	9	9			24	24	8.30
FLAREOUT FOR SWATH RUN				4			4	4	1.38
PULLUP FROM SWATH RUN			1	2			3	3	1.04
PROCEDURE TURNAROUND	1			10			11	11	3.81
CLEANUP SWATH				1			1	1	.35
MANEUVER TO AVOID OBSTRUCTION									
RETURN TO STRIP									
LANDING									
TRAFFIC PATTERN-CIRCLING			1	1			2	2	.69
FINAL APPROACH (VFR)	1	1	1	4			7	7	2.42
INITIAL APPROACH									
FINAL APPROACH (IFR)									
LEVEL OFF/TOUCHDOWN		2		4			6	6	2.08
ROLL (FIXED WING)									
ROLL-ON/RUN-ON (ROTORCRAFT)			1	3			4	4	1.38
POWER-ON LANDING (ROTORCRAFT)		1	5	9			15	15	5.19
POWER-OFF AUTOROTATIVE LDG		2	2	12			16	16	5.54
GO-AROUND (VFR)				2			2	2	.69
MISSED APPROACH (IFR)									
OTHER				2			2	2	.69
UNKNOWN/NOT REPORTED	1	1					2	2	.69
OTHER									
RECORDS	30	35	53	162			289		
ACCIDENTS	30	35	53	162				289	
PERCENTS	.0	13.5	12.1	18.3	56.1	.0	.0		

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

ROTORCRAFT

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 289 TOTAL ACCIDENTS

INVOLVES 39 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	21 53.85	4 10.26	22 56.41	153 61.20	11 4.40	157 62.80	174 60.21	15 5.19	179 61.94
PERSONNEL	3 7.69	1 2.56	4 10.26	22 8.80	4 1.60	26 10.40	25 8.65	5 1.73	30 10.38
AIRFRAME	1 2.56	.00	1 2.56	1 .40	.00	1 .40	2 .69	.00	2 .69
LANDING GEAR	.00	.00	.00	3 1.20	.00	3 1.20	3 1.04	.00	3 1.04
POWERPLANT	.00	.00	.00	53 21.20	4 1.60	57 22.80	53 18.34	4 1.38	57 19.72
SYSTEMS	.00	.00	.00	2 .80	1 .40	3 1.20	2 .69	1 .35	3 1.04
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	11 28.21	.00	11 28.21	35 14.00	.00	35 14.00	46 15.92	.00	46 15.92
AIRPORT/AIRWAYS/FACILITIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
WEATHER	.00	6 15.38	6 15.38	1 .40	31 12.40	32 12.80	1 .35	37 12.80	38 13.15
TERRAIN	.00	5 12.82	5 12.82	5 2.00	54 21.60	59 23.60	5 1.73	59 20.42	64 22.15
MISCELLANEOUS	2 5.13	.00	2 5.13	10 4.00	4 1.60	14 5.60	12 4.15	4 1.38	16 5.54
UNDETERMINED	6 15.38	.00	6 15.38	6 2.40	.00	6 2.40	12 4.15	.00	12 4.15

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

ROTORCRAFT

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 289 TOTAL ACCIDENTS

INVOLVES 39 FATAL ACCIDENTS

	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
ATTEMPTED OPERATION BEYOND EXPERIENCE/ABILITY LEVEL	1		1	1		1	2		2
BECAME LOST/DISORIENTED				2		2	2		2
CONTINUED VFR FLIGHT INTO ADVERSE WEATHER CONDITIONS	2		2	1		1	3		3
DELAYED IN INITIATING GO-AROUND				1		1	1		1
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT	1		1	2	3	5	3	3	6
FAILED TO SEE AND AVOID OTHER AIRCRAFT	1		1				1		1
FAILED TO SEE AND AVOID OBJECTS OR OBSTRUCTIONS	4		4	20		20	24		24
FAILED TO OBTAIN/MAINTAIN FLYING SPEED				3		3	3		3
MISJUDGED, SPEED, ALTITUDE OR CLEARANCE				1		1	1		1
FAILED TO MAINTAIN ADEQUATE ROTOR RPM	3		3	32	1	33	35	1	36
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT		1	1	1		1	1	1	2
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC	2		2	1		1	3		3
IMPROPER OPERATION OF POWERPLANT + POWERPLANT CONTROLS				8		8	8		8
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				2		2	2		2
IMPROPER OPERATION OF FLIGHT CONTROLS	3		3	17		17	20		20
IMPROPER LEVEL OFF				1		1	1		1
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				6	1	7	6	1	7
IMPROPER COMPENSATION FOR WIND CONDITIONS				3	1	4	3	1	4
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING	3		3	17	2	19	20	2	22
INADEQUATE SUPERVISION OF FLIGHT				4		4	4		4
LACK OF FAMILIARITY WITH AIRCRAFT		1	1		1	1		2	2
MISMANAGEMENT OF FUEL				9		9	9		9
EXERCISED POOR JUDGMENT	2		2	3		3	5		5
OPERATED CARELESSLY				1		1	1		1
SELECTED UNSUITABLE TERRAIN				6	1	7	6	1	7
IMPROPER STARTING PROCEDURES				1		1	1		1
INITIATED FLIGHT IN ADVERSE WEATHER CONDITIONS				2		2	2		2
MISJUDGED DISTANCE AND ALTITUDE				6		6	6		6
MISJUDGED SPEED AND ALTITUDE				9		9	9		9
MISJUDGED ALTITUDE AND CLEARANCE	1		1	1		1	2		2
MISJUDGED ALTITUDE	1		1	5	1	6	6	1	7
MISJUDGED CLEARANCE	1		1	17		17	18		18
PHYSICAL IMPAIRMENT		2	2					2	2
SPATIAL DISORIENTATION	1		1				1		1
LEFT AIRCRAFT UNATTENDED ENGINE RUNNING				1		1	1		1
FAILED TO INITIATE GO-AROUND				2		2	2		2
SUBTOTAL	28	4	30	188	11	197	212	15	227
DUAL STUDENT									
FAILED TO MAINTAIN ADEQUATE ROTOR RPM				1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS				1		1	1		1
SPONTANEOUS-IMPROPER ACTION				1		1	1		1
MISJUDGED SPEED AND ALTITUDE				1		1	1		1
SUBTOTAL				4		4	4		4
** PERSONNEL **									
RULES, REGULATIONS, STANDARDS PERSONNEL					1	1		1	1
FLIGHT INSTRUCTOR									
MAINTENANCE, SERVICING, INSPECTION									
IMPROPER MAINTENANCE(MAINTENANCE PERSONNEL)				2		2	2		2
IMPROPER MAINTENANCE(OWNER PERSONNEL)	1		1	1		1	2		2
IMPROPERLY SERVICED AIRCRAFT(OWNER-PILOT)				1		1	1		1
INADEQUATE INSPECTION OF AIRCRAFT(MAINTENANCE PERSONNEL)		1	1					1	1
INADEQUATE MAINTENANCE AND INSPECTION	1		1	11	1	12	12	1	13
OTHER				1		1	1		1
OPERATIONAL SUPERVISORY PERSONNEL									
DEFICIENCY, COMPANY MAINTAINED EQMT, SERV, REGULATIONS				1		1	1		1
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS	1		1				1		1

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

PERSONNEL (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
INADEQUATE SPACING OF AIRCRAFT	1		1				1		1
AIRPORT SUPERVISORY PERSONNEL				1		1	1		1
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
POOR/INADEQUATE DESIGN									
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT									
GROUND SIGNALMAN	1		1				1		1
GROUND CREWMAN					1	1		1	1
PASSENGER				1	1	2	1	1	2
OTHER				2		2	2		2
THIRD PILOT				1		1	1		1
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	5	1	6	22	4	26	27	5	32
** AIRFRAME **									
WINGS									
FUSELAGE									
OTHER									
LANDING GEAR				1		1	1		1
MAIN GEAR-SHOCK ABSORBING ASSY. STRUTS. ATTACHMENTS. ETC				1		1	1		1
SKID ASSEMBLY				2		2	2		2
FLIGHT CONTROL SURFACES									
RUDDER. SURFACES ATTACHMENTS	1		1				1		1
SUBTOTAL	1		1	4		4	5		5
** POWERPLANT **									
ENGINE STRUCTURE									
MASTER AND CONNECTING RODS				3		3	3		3
CYLINDER ASSEMBLY				2		2	2		2
VALVE ASSEMBLIES				3		3	3		3
OTHER				1		1	1		1
IGNITION SYSTEM									
MAGNETOES				1		1	1		1
SPARK PLUG				2		2	2		2
FUEL SYSTEM									
LINES AND FITTINGS				1		1	1		1
FILTERS. STRAINERS. SCREENS				1		1	1		1
CARBURETOR					1	1		1	1
PUMPS				1		1	1		1
VENTS. DRAINS. TANK CAPS				1		1			
OTHER				1		1	1		1
LUBRICATING SYSTEM				1		1	1		1
LINES. HOSES. FITTINGS									
COOLING SYSTEM				1		1	1		1
PROPELLER AND ACCESSORIES									
OTHER									
EXHAUST SYSTEM				1		1	1		1
ENGINE ACCESSORIES									
ENGINE CONTROLS									
POWERPLANT-INSTRUMENTS									
FUEL QUANTITY GAUGE									
OTHER					2	2		2	2
MISCELLANEOUS					1	1		1	1
POWERPLANT FAILURE FOR UNDETERMINED REASONS									
FOREIGN OBJECT DAMAGE				21		21	21		21
REDUCTION GEAR ASSEMBLY				2		2	2		2
COMPRESSOR ASSEMBLY									
BLADE. COMPRESSOR ROTOR									
SHAFT. ROTOR				1		1	1		1
COMBUSTION ASSEMBLY				1		1	1		1
TURBINE ASSEMBLY									
WHEEL. TURBINE									
BLADE. TURBINE WHEEL				1		1	1		1
SEALS. AIR-OIL				1		1	1		1
BEARING. SHAFT				1		1	1		1
ACCESSORY DRIVE ASSEMBLY				3		3	3		3
LUBRICATING SYSTEM									
OTHER									
FUEL SYSTEM				1		1	1		1

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

POWERPLANT (CONTINUED)	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
DETAILED CAUSE/FACTOR	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
PUMP, FUEL				2		2	2		2
FUEL CONTROL				3		3	3		3
OTHER				1		1	1		1
SAFETY SYSTEM									
IGNITION SYSTEM									
TORQUEMETER									
AIR BLEED									
EXHAUST SYSTEM									
THRUST REVERSER									
PROPELLER SYSTEM									
CONSTANT SPEED DRIVE									
POWER LEVER									
PROPELLER LEVER									
REVERSE THRUST LEVER									
ENGINE INDICATING EQUIPMENT									
ENGINE INSTALLATION									
SUBTOTAL				57	4	61	57	4	61
** SYSTEMS **									
ELECTRICAL SYSTEM				1		1	1		1
RELAYS AND WIRING					1	1		1	1
SWITCHES									
HYDRAULIC SYSTEM									
FLIGHT CONTROL SYSTEMS									
ANTI-ICING, DE-ICING SYSTEMS									
AIR CONDITION, HEATING AND PRESSURIZATION									
AUTO PILOT									
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
OTHER				1		1	1		1
SUBTOTAL				2	1	3	2	1	3
** ROTORCRAFT **									
ROTOR ASSEMBLIES									
MAIN ROTOR BLADES				1		1	1		1
TAIL ROTOR BLADES	2		2	4		4	6		6
MAIN ROTOR HEAD ASSEMBLIES	1		1	2		2	3		3
UNIVERSAL JOINTS, COUPLINGS				1		1	1		1
BEARINGS	1		1				1		1
OTHER				3		3	3		3
TRANSMISSION ROTOR DRIVE SYSTEM									
ENGINE DRIVE SHAFT				3		3	3		3
MAIN ROTOR DRIVE SHAFT	1		1				1		1
MAIN ROTOR BRAKE ASSEMBLY				1		1	1		1
MAIN ROTOR PULLEYS, BELTS				2		2	2		2
TAIL ROTOR DRIVE SHAFT ASSEMBLY	1		1	6		6	7		7
TAIL ROTOR GEAR BOX				3		3	3		3
CLUTCH ASSEMBLY				3		3	3		3
SPRAG SYSTEM				3		3	3		3
OTHER	1		1	2		2	3		3
FLIGHT CONTROL SYSTEMS									
CYCLIC PITCH CONTROL SYSTEM	2		2				2		2
COLLECTIVE PITCH CONTROL SYSTEM	1		1				1		1
TAIL ROTOR PITCH CONTROL SYSTEM				3		3	3		3
MISCELLANEOUS UNITS AND ASSEMBLIES									
TAIL BOOMS/PYLONS/CONES	1		1				1		1
OTHER	1		1				1		1
SUBTOTAL	12		12	37		37	49		49
** WEATHER **									
LOW CEILING		1	1		2	2		3	3
RAIN		2	2					2	2
FOG		2	2		4	4		6	6
CONDITIONS CONDUCIVE TO CARB/INDUCTION SYSTEM ICING					3	3		3	3
UNFAVORABLE WIND CONDITIONS		1	1	1	12	13	1	13	14
SUDDEN WINDSHIFT					1	1		1	1
TURBULENCE ASSOCIATED WITH CLOUDS AND/OR THUNDERSTORMS		1	1					1	1
DOWNDRAFTS, UPDRAFTS					3	3		3	3

BEST DOCUMENT AVAILABLE

WEATHER (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
HIGH DENSITY ALTITUDE		1	1		9	9		10	10
THUNDERSTORM ACTIVITY		1	1		1	1		2	2
SUBTOTAL		0	0	1	35	36	1	44	45
** TERRAIN **									
WET, SOFT GROUND				1	11	12	1	11	12
SNOW-COVERED					2	2		2	2
HIGH VEGETATION				2	5	7	2	5	7
HIDDEN OBSTRUCTIONS					1	1		1	1
ROUGH/UNEVEN					10	10		10	10
HIGH OBSTRUCTIONS		5	5	2	23	25	2	28	30
OTHER					2	2		2	2
SUBTOTAL		5	5	5	54	59	5	59	64
** MISCELLANEOUS **									
FOREIGN OBJECT DAMAGE				2		2	2		2
FOREIGN MATERIAL AFFECTING NORMAL OPERATIONS	1		1	3		3	4		4
UNDETERMINED	6		6	6		6	12		12
VORTEX TURBULENCE				1		1	1		1
EVASIVE MANEUVER TO AVOID COLLISION	1		1	2	4	6	3	4	7
UNQUALIFIED PERSON OPERATED AIRCRAFT				2		2	2		2
SUBTOTAL	8		8	16	4	20	24	4	28
GRAND TOTAL	52	19	71	334	113	447	386	132	518
** MISCELLANEOUS ACTS, CONDITIONS **									
LEAK/LEAKAGE				1		1	1		1
DOWNWIND					2	2		2	2
CARBON DEPOSITS				2	1	3	2	1	3
LOOSE, PART/FITTING				2		2	2		2
GROUND RESONANCE				5	1	6	5	1	6
DISCONNECTED	2		2	1		1	3		3
DISTORTED				1		1	1		1
EXCESSIVE-WEAR/PLAY				4		4	4		4
ERRATIC					1	1		1	1
FRAYED				1		1	1		1
FRICTION, EXCESSIVE				1		1	1		1
GROUNDED				1		1	1		1
OBSTRUCTED				1	1	2	1	1	2
OPEN				1		1	1		1
OUT OF BALANCE				1		1	1		1
OVERHEATED	1		1	2		2	3		3
EXCESSIVE PRESSURE				1		1	1		1
PRESSURE TOO LOW				2		2	2		2
STUCK					1	1		1	1
VIBRATION, EXCESSIVE				4		4	4		4
WARPED				1		1	1		1
ICE-INDUCTION				1		1	1		1
LOAD NOT JETTISONED					5	5		5	5
ANTI-ICING/DEICING EQUIP-IMPROPER OPER, OR/FAILED TO USE				4		4	4		4
DISREGARD OF GOOD OPERATING PRACTICE				1	1	2	1	1	2
IMPROPER EMERGENCY PROCEDURES					1	1		1	1
GUST LOCKS ENGAGED					1	1		1	1
UNWARRANTED LOW FLYING	3	1	4	2	1	3	5	2	7
INATTENTIVE TO FUEL SUPPLY				2		2	2		2
POORLY PLANNED APPROACH					1	1		1	1
MISCALCULATED FUEL CONSUMPTION	1		1	1		1	2		2
JETTISONED LOAD		1	1		2	2		3	3
STOLEN OR UNAUTHORIZED USE OF AIRCRAFT					1	1		1	1
IMPROPERLY SECURED	1		1	1		1	2		2
ELECTRICAL FAILURE					1	1		1	1
ENGINE LOADED UP				2		2	2		2
FATIGUE FRACTURE	4		4	8		8	12		12
IMPROPER GRADE OIL-LUBRICATING SYSTEM				1		1	1		1
WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION					1	1		1	1
WRONG PART				1		1	1		1
IMPROPER ALIGNMENT/ADJUSTMENT				1		1	1		1
SEPARATION IN FLIGHT		7	7		5	5		12	12
CORRODED/CORROSION				2		2	2		2

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

MISCELLANEOUS ACTS, CONDITIONS (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
FUEL EXHAUSTION	1		1	10		10	11		11
FUEL CONTAMINATION-EXCLUSIVE OF WATER IN FUEL				2		2	2		2
ICE-CARBURETOR				3		3	3		3
IMPROPERLY LOADED AIRCRAFT-WEIGHT-AND/OR CG	1		1	1		1	2		2
INTERFERENCE WITH FLIGHT CONTROLS				4		4	4		4
WHITEOUT				1	1	2	1	1	2
SUNGLARE					6	6		6	6
LACK OF LUBRICATION-SPECIFIC PART, NOT SYSTEM	1		1	3		3	4		4
OIL EXHAUSTION-ENGINE LUBRICATION SYSTEM				1		1	1		1
OIL CONTAMINATION				1		1	1		1
SIMULATED CONDITIONS					3	3		3	3
WATER IN FUEL				2		2	2		2
AIRCRAFT CAME TO REST IN WATER		2	2	7	9	9		11	11
MISSING				3		3	3		3
OVERLOAD FAILURE				4	7	11	4	7	11
MATERIAL FAILURE	4		4	30	1	31	34	1	35
FUEL STARVATION				6		6	6		6
OIL STARVATION				1		1	1		1

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
ROTORCRAFT

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL							
DUAL		3	1	9	13	13	4.50
SOLO	1			3	4	4	1.38
CHECK							
TRAINING	1	1		2	4	4	1.38
NONCOMMERCIAL							
PLEASURE	10	5	12	19	46	46	15.92
PRACTICE	2	1		8	11	11	3.81
BUSINESS	2	1	2	11	16	16	5.54
CORPORATE/EXECUTIVE	1	3	3	11	18	18	6.23
AERIAL SURVEY	1			4	5	5	1.73
COMPANY FLIGHT							
OTHER			1	1	2	2	.69
COMMERCIAL							
AERIAL APPLICATION	2	6	11	28	47	47	16.26
CROP CONTROL RELATED FLIGHT	2	4	6	15	27	27	9.34
FIRE CONTROL		1			1	1	.35
FIRE CONTROL RELATED FLIGHT							
AERIAL MAPPING/PHOTOGRAPHY	3			1	4	4	1.38
AERIAL ADVERTISING		1			1	1	.35
POWER AND PIPELINE PATROL			1	1	2	2	.69
FISH SPOTTING							
AIR TAXI-PASSENGER OPERATIONS	4	5	4	12	25	25	8.65
AIR TAXI-CARGO OPERATIONS	1				1	1	.35
CONSTRUCTION WORK	2		1	3	6	6	2.08
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.	1		1		2	2	.69
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC		1	2	1	4	4	1.38
CHARTER PASSG-DOMESTIC		1	1	1	3	3	1.04
CHARTER-CARGO-INTERNATIONAL				1	1	1	.35
CHARTER-PASSG-INTERNATIONAL							
OTHER	1	1	3	9	14	14	4.84
UNKNOWN/NOT REPORTED							

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
MISCELLANEOUS							
EXPERIMENTATION							
TEST	2			8	10	10	3.46
DEMONSTRATION	1	1		3	5	5	1.73
FERRY			2	5	7	7	2.42
SEARCH AND RESCUE				2	2	2	.69
AIR SHOW/AIR RACING							
PARACHUTE JUMP							
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS							
SEEDING CLOUDS							
HUNTING			1		1	1	.35
POLICE PATROL	1			2	3	3	1.04
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING							
OTHER			1	2	3	3	1.04
UNKNOWN/NOT REPORTED	1				1	1	.35
RECORDS	39	35	53	162	289		
ACCIDENTS	39	35	53	162		289	
PERCENTS	13.5	12.1	18.3	56.1			

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
ROTORCRAFT

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	32	29	49	178		288
COPILOT	2	1	1	1		5
DUAL STUDENT		2	2	8		12
CHECK PILOT				1		1
FLIGHT ENGINEER				1		1
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW	1	1	1			3
PASSENGERS	21	15	22	127		185
TOTAL	56	48	75	316	ABOARD	495
* OTHER AIRCRAFT	4					4
OTHER GROUND	3	4	2	2		11
GRAND TOTAL	63	52	77	318		510

INVOLVES 289 TOTAL ACCIDENTS
INVOLVES 39 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

GENERAL AVIATION ACCIDENTS

GLIDER AIRCRAFT

ANALYTIC TABLE

FIRST TYPE OF ACCIDENT BY AIRCRAFT DAMAGE
GLIDER

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
GROUND-WATER LOOP-SWERVE		2	1		3	3	5.56
DRAGGED WINGTIP POD OR FLOAT							
WHEELS-UP LANDING							
WHEELS-DOWN LANDING IN WATER							
GEAR COLLAPSED							
GEAR RETRACTED							
HARD LANDING		3			3	3	5.56
NOSE OVER/DOWN							
ROLL OVER							
OVERSHOOT		3			3	3	5.56
UNDERSHOOT		10			10	10	18.52
COLLISION BETWEEN AIRCRAFT							
BOTH IN FLIGHT							
ONE AIRBORNE							
BOTH ON GROUND							
COLLISION WITH GROUND/WATER							
CONTROLLED	1	2			3	3	5.56
UNCONTROLLED		1			1	1	1.85
COLLIDED WITH							
WIRES/POLES		3			3	3	5.56
TREES	2	2			4	4	7.41
RESIDENCE/S							
BUILDING/S							
FENCE, FENCEPOSTS		1			1	1	1.85
ELECTRONIC TOWERS							
RUNWAY OR APPROACH LIGHTS		1			1	1	1.85
AIRPORT HAZARD							
ANIMALS							
CROP							
FLAGMAN LOADER							
DITCHES							
SNOWBANK							
PARKED AIRCRAFT (UNATTENDED)		1			1	1	1.85
AUTOMOBILE							
DIRT BANK							
OTHER	1	5			6	6	11.11
BIRD STRIKE		1			1	1	1.85

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STALL		2			2	2	3.70
SPIN	5	3			8	8	14.81
SPIRAL							
MUSH							
FIRE OR EXPLOSION							
IN FLIGHT							
ON GROUND							
AIRFRAME FAILURE							
IN FLIGHT							
ON GROUND							
ENGINE TEARAWAY							
ENGINE FAILURE OR MALFUNCTION							
PROPELLER/ROTOR FAILURE							
PROPELLER							
TAIL ROTOR							
MAIN ROTOR							
PROP ROTOR ACONT TO PERSON							
JET INTAKE/EXH ACONT TO PERS							
PROPELLER/JET/ROTOR BLAST							
TURBULENCE							
HAIL DAMAGE TO AIRCRAFT							
LIGHTNING STRIKE							
EVASIVE MANEUVER							
UNCONTROLLED ALT DEVIATION							
DITCHING							
MISSING ACFT NOT RECOVERED							
MISCELLANEOUS/OTHER		3			3	3	5.56
UNDETERMINED	1				1	1	1.85
RECORDS	10	43	1		54		
ACCIDENTS	10	43	1			54	
PERCENTS	18.5	79.6	1.9	.0			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

FIRST PHASE OF OPERATION BY INJURY INDEX
GLIDER

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STATIC							
STARTING ENGINE/S							
IDLING ENGINE/S							
ENGINE RUNUP							
IDLING ROTORS							
PARKED-ENGINES NOT OPERATING							
OTHER							
TAXI							
TO TAKEOFF							
FROM LANDING							
OTHER							
GROUND TAXI TO TAKEOFF							
GROUND TAXI FROM LANDING							
GROUND TAXI, OTHER							
AERIAL TAXI TO TAKEOFF							
AERIAL TAXI TO/FROM LANDING							
AERIAL TAXI, OTHER							
TAKEOFF							
RUN			1		1	1	1.85
INITIAL CLIMB	2	2	2		6	6	11.11
VERTICAL							
RUNNING (ROTORCRAFT/VTOL-STOL)							
ABORTED (FIXED-WING)			1		1	1	1.85
ABORTED (ROTORCRAFT/VTOL)							
ABORTED (ROTORCRAFT/STOL)							
OTHER			1		1	1	1.85
INFLIGHT							
CLIMB TO CRUISE							
NORMAL CRUISE	1				1	1	1.85
DESCENDING							
HOLDING (IFR)							
HOVERING							
POWER-ON DESCENT (ROTORCRAFT)							
AUTOROTATIVE DESCENT							
ACROBATICS	1				1	1	1.85
BUZZING							
UNCONTROLLED DESCENT			1		1	1	1.85

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EMERGENCY DESCENT							
LOW PASS							
OTHER							
EN ROUTE TO TREAT CROP							
EN ROUTE TO RELOADING AREA							
SURVEY FIELD/AREA							
STARTING SWATH RUN							
SWATH RUN							
FLAREOUT FOR SWATH RUN							
PULLUP FROM SWATH RUN							
PROCEDURE TURNAROUND							
CLEANUP SWATH							
MANEUVER TO AVOID OBSTRUCTION							
RETURN TO STRIP							
LANDING							
TRAFFIC PATTERN-CIRCLING		4			4	4	7.41
FINAL APPROACH (VFR)	1	6	3	8	18	18	33.33
INITIAL APPROACH							
FINAL APPROACH (IFR)							
LEVEL OFF/TOUCHDOWN		2	2	7	11	11	20.37
ROLL (FIXED WING)			2	4	6	6	11.11
ROLL-ON/RUN-ON (ROTORCRAFT)							
POWER-ON LANDING (ROTORCRAFT)							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUND (VFR)							
MISSED APPROACH (IFR)							
OTHER		1		1	2	2	3.70
UNKNOWN/NOT REPORTED	1				1	1	1.85
RECORDS	2	17	9	26	54		
ACCIDENTS	2	17	9	26		54	
PERCENTS	3.7	31.5	16.7	48.1			

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

GLIDER

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 54 TOTAL ACCIDENTS

INVOLVES 2 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	1 50.00	1 50.00	1 50.00	46 88.46	8 15.38	46 88.46	47 87.04	9 16.67	47 87.04
PERSONNEL	.00	.00	.00	3 5.77	.00	3 5.77	3 5.56	.00	3 5.56
AIRFRAME	.00	.00	.00	.00	.00	.00	.00	.00	.00
LANDING GEAR	.00	.00	.00	.00	.00	.00	.00	.00	.00
POWERPLANT	.00	.00	.00	.00	.00	.00	.00	.00	.00
SYSTEMS	.00	.00	.00	1 1.92	.00	1 1.92	1 1.85	.00	1 1.85
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	2 3.85	.00	2 3.85	2 3.70	.00	2 3.70
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORT/AIRWAYS/FACILITIES	.00	.00	.00	.00	3 5.77	3 5.77	.00	3 5.56	3 5.56
WEATHER	.00	.00	.00	.00	11 21.15	11 21.15	.00	11 20.37	11 20.37
TERRAIN	.00	.00	.00	1 1.92	11 21.15	12 23.08	1 1.85	11 20.37	12 22.22
MISCELLANEOUS	.00	.00	.00	3 5.77	.00	3 5.77	3 5.56	.00	3 5.56
UNDETERMINED	1 50.00	.00	1 50.00	.00	.00	.00	1 1.85	.00	1 1.85

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

GLIDER

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 54 TOTAL ACCIDENTS

INVOLVES 2 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT				1		1	1		1
FAILED TO OBTAIN/MAINTAIN FLYING SPEED	1		1	9		9	10		10
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT				2		2	2		2
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC				1		1	1		1
IMPROPER OPERATION OF FLIGHT CONTROLS				4	1	5	4	1	5
IMPROPER LEVEL OFF				1		1	1		1
IMPROPER IN-FLIGHT DECISIONS OR PLANNING				10	1	11	10	1	11
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING				2		2	2		2
INADEQUATE SUPERVISION OF FLIGHT				2		2	2		2
LACK OF FAMILIARITY WITH AIRCRAFT				2	6	8	2	6	8
EXERCISED POOR JUDGMENT				1		1	1		1
SELECTED UNSUITABLE TERRAIN				3		3	3		3
MISJUDGED DISTANCE, SPEED, AND ALTITUDE				2		2	2		2
MISJUDGED DISTANCE AND SPEED				2		2	2		2
MISJUDGED DISTANCE AND ALTITUDE				9		9	9		9
MISJUDGED ALTITUDE AND CLEARANCE				1		1	1		1
MISJUDGED CLEARANCE				3		3	3		3
MISUSED OR FAILED TO USE FLAPS				1		1	1		1
FAILED TO INITIATE GO-AROUND		1	1					1	1
SUBTOTAL	1	1	2	56	8	64	57	9	66
DUAL STUDENT									
IMPROPER OPERATION OF FLIGHT CONTROLS				1		1	1		1
MISJUDGED DISTANCE, SPEED, AND ALTITUDE				1		1	1		1
SUBTOTAL				2		2	2		2
** PERSONNEL **									
RULES, REGULATIONS, STANDARDS PERSONNEL									
FLIGHT INSTRUCTOR									
MAINTENANCE, SERVICING, INSPECTION									
INADEQUATE MAINTENANCE AND INSPECTION				1		1	1		1
OPERATIONAL SUPERVISORY PERSONNEL									
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
MISCELLANEOUS-PERSONNEL									
PASSENGER				1		1	1		1
OTHER				1		1	1		1
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL				3		3	3		3
** SYSTEMS **									
ELECTRICAL SYSTEM									
HYDRAULIC SYSTEM									
FLIGHT CONTROL SYSTEMS									
ELEVATOR AND ELEVATOR TAB CONTROL SYSTEM				1		1	1		1
ANTI-ICING, DE-ICING SYSTEMS									
AIR CONDITION, HEATING AND PRESSURIZATION									
AUTO PILOT									
FIRE WARNING SYSTEM									
FIRE EXTINGUISHER SYSTEM									
OXYGEN SYSTEM									
OTHER SYSTEMS									
SUBTOTAL				1		1	1		1

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** INSTRUMENTS/EQUIPMENT AND ACCESSORIES **									
FLIGHT AND NAVIGATION INSTRUMENTS									
COMMUNICATIONS AND NAVIGATION EQUIPMENT									
MISCELLANEOUS EQUIPMENT									
GLIDER LAUNCH/TOW EQUIPMENT									
SUBTOTAL				2		2	2		2
** AIRPORTS/AIRWAYS/FACILITIES **				2		2	2		2
AIRPORT FACILITIES									
RUNWAY LIGHTING									
AIRPORT CONDITIONS									
HIGH VEGETATION					1	1		1	1
AIRWAYS FACILITIES					2	2		2	2
SUBTOTAL					3	3		3	3
** WEATHER **									
UNFAVORABLE WIND CONDITIONS									
WIND SHEAR					3	3		3	3
DOWNDRAFTS, UPDRAFTS					1	1		1	1
OTHER					6	6		6	6
SUBTOTAL					2	2		2	2
** TERRAIN **					12	12		12	12
WET, SOFT GROUND									
HIGH VEGETATION					1	1		1	1
ROUGH/UNEVEN				1	2	3	1	2	3
HIGH OBSTRUCTIONS					4	4		4	4
SUBTOTAL					5	5		5	5
** MISCELLANEOUS **				1	12	13	1	12	13
UNDETERMINED									
BIRD COLLISION	1		1						
ANIMAL(S) ON RUNWAY/TAXIWAY/RAMP				1		1	1		1
EVASIVE MANEUVER TO AVOID COLLISION				1		1	1		1
DIRECT ENTRIES				1		1	1		1
SUBTOTAL				1		1	1		1
GRAND TOTAL	1		1	4		4	5		5
** MISCELLANEOUS ACTS, CONDITIONS **	2	1	3	69	35	104	71	36	107
DISCONNECTED									
RAN OFF END OF RUNWAY				1		1	1		1
POORLY PLANNED APPROACH					2	2		2	2
INTERFERENCE WITH FLIGHT CONTROLS					1	1		1	1
SUNGLARE				1		1	1		1
MATERIAL FAILURE					1	1		1	1
				1		1	1		1

DIRECT ENTRY CAUSES

MISC-TOW RELEASED ON TKOF FOR UNDET REASON.

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
GLIDER

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL							
DUAL		3		3	6	6	11.11
SOLO				1	1	1	1.85
CHECK							
TRAINING		3	1	2	6	6	11.11
NONCOMMERCIAL							
PLEASURE	2	10	8	19	39	39	72.22
PRACTICE		1		1	2	2	3.70
BUSINESS							
CORPORATE/EXECUTIVE							
AERIAL SURVEY							
COMPANY FLIGHT							
OTHER							
COMMERCIAL							
AERIAL APPLICATION							
CROP CONTROL RELATED FLIGHT							
FIRE CONTROL							
FIRE CONTROL RELATED FLIGHT							
AERIAL MAPPING/PHOTOGRAPHY							
AERIAL ADVERTISING							
POWER AND PIPELINE PATROL							
FISH SPOTTING							
AIR TAXI-PASSENGER OPERATIONS							
AIR TAXI-CARGO OPERATIONS							
CONSTRUCTION WORK							
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC							
CHARTER PASSG-DOMESTIC							
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL							
OTHER							
UNKNOWN/NOT REPORTED							

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
MISCELLANEOUS							
EXPERIMENTATION							
TEST							
DEMONSTRATION							
FERRY							
SEARCH AND RESCUE							
AIR SHOW/AIR RACING							
PARACHUTE JUMP							
PARACHUTE JUMP-AIR SHOW							
TOWING GLIDERS							
SEEDING CLOUDS							
HUNTING							
POLICE PATROL							
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING							
OTHER							
UNKNOWN/NOT REPORTED							
RECORDS	2	17	9	26	54		
ACCIDENTS	2	17	9	26		54	
PERCENTS	3.7	31.5	16.7	48.1			

BEST DOCUMENT AVAILABLE 167

INJURIES.ACCIDENTS
GLIDER

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	2	14	12	26		54
COPILOT						
DUAL STUDENT		2	1	3		6
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS		2		4		6
TOTAL	2	18	13	33	ABOARD	66
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	2	18	13	33		66

INVOLVES 54 TOTAL ACCIDENTS
INVOLVES 2 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

COLLISIONS BETWEEN AIRCRAFT

ANALYTIC TABLE

TYPE OF COLLISION BY INJURY INDEX

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
BOTH IN FLIGHT	27	4		18	49	25	62.82
ONE AIRBORNE	2		2	6	10	5	12.82
BOTH ON GROUND			3	16	19	11	24.36
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

FIRST PHASE OF OPERATION BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STATIC							
STARTING ENGINE/S							
IDLING ENGINE/S			1	2	3	3	3.85
ENGINE RUNUP							
IDLING ROTORS							
PARKED-ENGINES NOT OPERATING							
OTHER							
TAXI							
TO TAKEOFF				6	6	4	7.69
FROM LANDING			1	3	4	4	5.13
OTHER				2	2	2	2.56
GROUND TAXI TO TAKEOFF							
GROUND TAXI FROM LANDING				1	1	1	1.28
GROUND TAXI, OTHER							
AERIAL TAXI TO TAKEOFF							
AERIAL TAXI TO/FROM LANDING							
AERIAL TAXI, OTHER							
TAKEOFF							
RUN			1	3	4	3	5.13
INITIAL CLIMB	1			3	4	3	5.13
VERTICAL							
RUNNING (ROTORCRAFT/VTOL-STOL)							
ABORTED (FIXED-WING)							
ABORTED (ROTORCRAFT/VTOL)							
ABORTED (ROTORCRAFT/STOL)							
OTHER							
INFLIGHT							
CLIMB TO CRUISE	1	2		1	4	3	5.13
NORMAL CRUISE	13	2		5	20	11	25.64
DESCENDING	1			1	2	2	2.56
HOLDING (IFR)							
HOVERING							
POWER-ON DESCENT (ROTORCRAFT)							
AUTOROTATIVE DESCENT							
ACROBATICS							
BUZZING							
UNCONTROLLED DESCENT							

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EMERGENCY DESCENT							
LOW PASS							
OTHER							
EN ROUTE TO TREAT CROP							
EN ROUTE TO RELOADING AREA							
SURVEY FIELD/AREA							
STARTING SWATH RUN							
SWATH RUN							
FLAREOUT FOR SWATH RUN							
PULLUP FROM SWATH RUN							
PROCEDURE TURNAROUND							
CLEANUP SWATH							
MANEUVER TO AVOID OBSTRUCTION							
RETURN TO STRIP							
LANDING							
TRAFFIC PATTERN-CIRCLING	5			2			
FINAL APPROACH (VFR)	4			4	7	4	8.97
INITIAL APPROACH					10	8	12.82
FINAL APPROACH (IFR)							
LEVEL OFF/TOUCHDOWN	1		1	5			
ROLL (FIXED WING)	1			2	7	6	8.97
ROLL-ON/RUN-ON (ROTORCRAFT)					3	3	3.85
POWER-ON LANDING (ROTORCRAFT)							
POWER-OFF AUTOROTATIVE LDG							
GO-AROUND (VFR)			1				
MISSED APPROACH (IFR)					1	1	1.28
OTHER							
UNKNOWN/NOT REPORTED							
RECORDS	29	6	5	40	78		
ACCIDENTS	15	3	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

BEST DOCUMENT AVAILABLE 172

CAUSE/FACTOR TABLE

COLLISIONS

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 40 TOTAL ACCIDENTS

INVOLVES 15 FATAL ACCIDENTS

BROAD CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*	CAUSE	FACTOR	TOTAL*
PILOT	15 100.00	2 13.33	15 100.00	24 96.00	6 24.00	24 96.00	39 97.50	8 20.00	39 97.50
PERSONNEL	15 100.00	.00	15 100.00	24 96.00	1 4.00	24 96.00	39 97.50	1 2.50	39 97.50
AIRFRAME	.00	.00	.00	.00	.00	.00	.00	.00	.00
LANDING GEAR	.00	.00	.00	.00	.00	.00	.00	.00	.00
POWERPLANT	.00	.00	.00	.00	.00	.00	.00	.00	.00
SYSTEMS	.00	.00	.00	.00	.00	.00	.00	.00	.00
INSTRUMENTS/EQUIPMENT & ACCESSORIES	.00	.00	.00	.00	.00	.00	.00	.00	.00
ROTORCRAFT	.00	.00	.00	.00	.00	.00	.00	.00	.00
AIRPORT/AIRWAYS/FACILITIES	.00	.00	.00	.00	3 12.00	3 12.00	.00	3 7.50	3 7.50
WEATHER	.00	.00	.00	.00	2 8.00	2 8.00	.00	2 5.00	2 5.00
TERRAIN	.00	.00	.00	.00	.00	.00	.00	.00	.00
MISCELLANEOUS	.00	.00	.00	.00	.00	.00	.00	.00	.00
UNDETERMINED	.00	.00	.00	.00	.00	.00	.00	.00	.00

THE FIGURES OPPOSITE EACH CAUSAL CATEGORY REPRESENT THE NUMBER AND PERCENT OF ACCIDENTS IN WHICH THAT PARTICULAR CAUSAL CATEGORY WAS ASSIGNED

* IF AN ACCIDENT INCLUDES BOTH A CAUSE AND RELATED FACTOR IN THE SAME CAUSAL CATEGORY, THE ACCIDENT IS REPRESENTED ONCE UNDER THE TOTAL FOR THAT CATEGORY

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

COLLISIONS

(EXCLUDES ACCIDENTS WITHOUT CAUSAL ASSIGNMENT)

INVOLVES 40 TOTAL ACCIDENTS

INVOLVES 15 FATAL ACCIDENTS

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
** PILOT **									
PILOT IN COMMAND									
DIVERTED ATTENTION FROM OPERATION OF AIRCRAFT					1	1		1	1
FAILED TO SEE AND AVOID OTHER AIRCRAFT	17		17	26		26	43		43
FAILED TO USE OR INCORRECTLY USED MISC EQUIPMENT					4	4		4	4
FAILED TO FOLLOW APPROVED PROCEDURES, DIRECTIVES ETC				3	1	4	3	1	4
IMPROPER OPERATION OF BRAKES AND/OR FLIGHT CONTROLS				1		1	1		1
IMPROPER IN-FLIGHT DECISIONS OR PLANNING		1	1					1	1
INADEQUATE PREFLIGHT PREPARATION AND/OR PLANNING					2	2		2	2
EXERCISED POOR JUDGMENT		1	1					1	1
OPERATED CARELESSLY					1	1		1	1
MISJUDGED DISTANCE				1		1	1		1
MISJUDGED SPEED AND CLEARANCE	1		1				1		1
MISJUDGED CLEARANCE	1		1	3		3	4		4
FAILED TO ABORT TAKEOFF				2		2	2		2
DIRECT ENTRIES	1		1	2		2	3		3
SUBTOTAL	20	2	22	38	9	47	58	11	69
DUAL STUDENT									
FAILED TO SEE OTHER AIRCRAFT	2		2	1		1	3		3
SUBTOTAL	2		2	1		1	3		3
CHECK PILOT									
FAILED TO SEE OTHER AIRCRAFT	1		1				1		1
SUBTOTAL	1		1				1		1
** PERSONNEL **									
RULES, REGULATIONS, STANDARDS PERSONNEL									
FLIGHT INSTRUCTOR									
MAINTENANCE, SERVICING, INSPECTION									
OPERATIONAL SUPERVISORY PERSONNEL									
WEATHER PERSONNEL									
TRAFFIC CONTROL PERSONNEL									
ISSUED IMPROPER OR CONFLICTING INSTRUCTIONS	1		1	1		1	2		2
INADEQUATE SPACING OF AIRCRAFT	1		1				1		1
OTHER				4		4	4		4
AIRPORT SUPERVISORY PERSONNEL									
AIRWAYS FACILITIES PERSONNEL									
PRODUCTION-DESIGN-PERSONNEL									
MISCELLANEOUS-PERSONNEL									
PILOT OF OTHER AIRCRAFT	21		21	32	1	33	53	1	54
THIRD PILOT									
FLIGHT ENGINEER									
FLIGHT PERSONNEL									
DISPATCHING (AIR CARRIER ONLY)									
SUBTOTAL	23		23	37	1	38	60	1	61
** AIRPORTS/AIRWAYS/FACILITIES **									
AIRPORT FACILITIES									
OTHER					2	2		2	2
AIRPORT CONDITIONS									
OTHER					4	4		4	4
AIRWAYS FACILITIES									
SUBTOTAL					6	6		6	6
** WEATHER **									
UNFAVORABLE WIND CONDITIONS					1	1		1	1

BEST DOCUMENT AVAILABLE

CAUSE/FACTOR TABLE

WEATHER (CONTINUED)

DETAILED CAUSE/FACTOR	FATAL ACCIDENTS			NONFATAL ACCIDENTS			ALL ACCIDENTS		
	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL	CAUSE	FACTOR	TOTAL
OBSTRUCTIONS TO VISION					2	2		2	2
SUBTOTAL					3	3		3	3
GRAND TOTAL	46	2	48	76	19	95	122	21	143
** MISCELLANEOUS ACTS, CONDITIONS **					1	1		1	1
WINDSHIELD, DIRTY, FOGGY, ETC-RESTRICTED VISION		2	2					2	2
SUNGLARE		2	2		3	3		5	5
TOUCH AND GO LANDING									

DIRECT ENTRY CAUSES

PILOT-FAILED TO MAINTAIN ADEQUATE SEPARATION
PILOT-FAILED TO MAINTAIN ADEQUATE SEPARATION
PILOT-FAILED TO MAINTAIN ADEQUATE SEPARATION

DIRECT ENTRY CAUSES ARE CARRIED UNDER THEIR APPROPRIATE CAUSAL CATEGORIES AND ARE INCLUDED IN THE TOTALS

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

KIND OF FLYING BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
INSTRUCTIONAL							
DUAL	3		1	4	8	7	10.26
SOLO	3		2	1	6	5	7.69
CHECK	2				2	2	2.56
TRAINING	1			3	4	3	5.13
NONCOMMERCIAL							
PLEASURE	8			19	27	19	34.62
PRACTICE	2			2	4	4	5.13
BUSINESS	2			3	5	4	6.41
CORPORATE/EXECUTIVE	2			1	3	3	3.85
AERIAL SURVEY							
COMPANY FLIGHT							
OTHER							
COMMERCIAL							
AERIAL APPLICATION							
CROP CONTROL RELATED FLIGHT			1		1	1	1.28
FIRE CONTROL							
FIRE CONTROL RELATED FLIGHT	1				1	1	1.28
AERIAL MAPPING/PHOTOGRAPHY							
AERIAL ADVERTISING				1	1	1	1.28
POWER AND PIPELINE PATROL							
FISH SPOTTING							
AIR TAXI-PASSENGER OPERATIONS	2	1		1	4	4	5.13
AIR TAXI-CARGO OPERATIONS			1	3	4	3	5.13
CONSTRUCTION WORK							
SCHEDULED PASSENGER SERVICE							
SCHEDULED CARGO SERVICE							
INTRA-STATE CHARTER PASSG.							
INTRA-STATE CHARTER CARGO.							
MILITARY CONTRACT-PASSENGER							
MILITARY CONTRACT-CARGO							
CHARTER CARGO-DOMESTIC							
CHARTER PASSG-DOMESTIC							
CHARTER-CARGO-INTERNATIONAL							
CHARTER-PASSG-INTERNATIONAL							
OTHER							
UNKNOWN/NOT REPORTED							

BEST DOCUMENT AVAILABLE 176

ANALYTIC TABLE

MISCELLANEOUS	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
EXPERIMENTATION							
TEST							
DEMONSTRATION		3		1	4	3	5.13
FERRY							
SEARCH AND RESCUE	2			1	3	2	3.85
AIR SHOW/AIR RACING							
PARACHUTE JUMP							
PARACHUTE JUMP-AIR SHOW	1				1	1	1.28
TOWING GLIDERS							
SEEDING CLOUDS							
HUNTING							
POLICE PATROL							
HIGHWAY TRAFFIC ADVISORY							
ALL OTHER PUBLIC FLYING							
OTHER							
UNKNOWN/NOT REPORTED							
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		50	
PERCENTS	37.2	5.1	6.4	51.3			

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
COLLISIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	17	4	5	52		78
COPILOT						
DUAL STUDENT	1	1		6		8
CHECK PILOT			1	1		2
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	13	2		26		41
TOTAL	31	7	6	85	ABOARD	129
* OTHER AIRCRAFT	4			3		7
OTHER GROUND						
GRAND TOTAL	35	7	6	88		136

INVOLVES 40 TOTAL ACCIDENTS
INVOLVES 15 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
BOTH AIRCRAFT AIRBORNE
COLLISIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT	17	3	2	27		49
COPILOT						
DUAL STUDENT		1		4		5
CHECK PILOT			1	1		2
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS	13	2		13		28
TOTAL	30	6	3	45	ABOARD	84
* OTHER AIRCRAFT	4					4
OTHER GROUND						
GRAND TOTAL	34	6	3	45		88

INVOLVES 25 TOTAL ACCIDENTS
INVOLVES 14 FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
ONE AIRCRAFT AIRBORNE
COLLISIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT		1	1	8		10
COPILOT						
DUAL STUDENT	1			1		2
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				4		4
TOTAL	1	1	1	13	ABOARD	16
OTHER AIRCRAFT						
OTHER GROUND						
GRAND TOTAL	1	1	1	13		16

INVOLVES 5 TOTAL ACCIDENTS
INVOLVES 1 FATAL ACCIDENTS

BEST DOCUMENT AVAILABLE

INJURIES.ACCIDENTS
BOTH AIRCRAFT ON GROUND
COLLISIONS

	INJURIES					
	FATAL	SERIOUS	MINOR	NONE	UNKNOWN	TOTAL
PILOT			2	17		19
COPILOT						
DUAL STUDENT				1		1
CHECK PILOT						
FLIGHT ENGINEER						
NAVIGATOR						
CABIN ATTENDANT						
EXTRA CREW						
PASSENGERS				9		9
TOTAL			2	27	ABOARD	29
* OTHER AIRCRAFT				3		3
OTHER GROUND						
GRAND TOTAL			2	30		32

INVOLVES 10 TOTAL ACCIDENTS
INVOLVES FATAL ACCIDENTS

* INJURIES CARRIED OPPOSITE OTHER-AIRCRAFT ARE INJURIES OCCURRING IN AIRCRAFT THAT ARE NOT PART OF THIS SUBJECT TABULATION, BUT WERE PART OF THE TOTAL INJURIES INVOLVED IN COLLISIONS BETWEEN AIRCRAFT.

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

SEGMENTS OF AVIATION INVOLVED
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
SML US GEN AVN-COLLISION SAME	26	4	4	40			
SML US GEN AVN-LRG US GEN AVN	2		1		74	37	94.87
SML US GEN AVN-US AIR CARRIER					3	2	3.85
SML US GEN AVN-US MILITARY	1						
SML US GEN AVN-FOREIGN GEN AV					1	1	1.28
SML US GEN AVN-FOREIGN ACR							
SML US GEN AVN-FOREIGN MIL							
LRG US GEN AVN-COLLISION SAME							
LRG US GEN AVN-US AIR CARRIER							
LRG US GEN AVN-US MILITARY							
LRG OS GEN AVN-FOREIGN GEN AV							
LRG US GEN AVN-FOREIGN ACR							
LRG US GEN AVN-FOREIGN MIL							
US AIR CARRIER-US AIR CARRIER							
U.S.AIR CARRIER-U.S.MILITARY							
US ACR-FOREIGN GEN AVIATION							
US AIR CARRIER-FOREIGN ACR							
US AIR CARRIER-FOREIGN MIL							
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

PILOT AGE BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
16	1				1	1	1.28
18	2			2	4	3	5.13
21	1			1	2	2	2.56
22				2	2	2	2.56
23	2			1	3	3	3.85
24		1			1	1	1.28
25			1	1	2	2	2.56
26				1	1	1	1.28
27	1			2	3	3	3.85
28	1			1	2	2	2.56
29	1		1	1	3	3	3.85
30	1				1	1	1.28
31	2			1	3	3	3.85
32	1			2	3	3	3.85
34				1	1	1	1.28
35				2	2	2	2.56
36	2	1		1	4	4	5.13
37	1	1	1		3	3	3.85
38	1			1	2	2	2.56
39	2			1	3	3	3.85
43	1				1	1	1.28
44				4	4	4	5.13
45	2			1	3	3	3.85
46		1			1	1	1.28
47				1	1	1	1.28
48				2	2	2	2.56
49	1		1	3	5	4	6.41
50	1			2	3	3	3.85
51	1			1	2	2	2.56
52	1			2	3	3	3.85
54	1			1	2	2	2.56
55	2				2	2	2.56
58			1		1	1	1.28
59				1	1	1	1.28
67				1	1	1	1.28
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

PILOT CERTIFICATE BY TYPE OF WEATHER CONDITIONS
COLLISIONS

	STUDENT	PRIVATE	COMMERCIAL	ATR	PRIVATE/FL.INSTR.	COMMERCIAL/FL.INSTR.	ATR/FL.INSTR.	OTHER	NONE	UNKNOWN/NOT REPORTED	RECORDS	ACCIDENTS	PERCENT
VFR	11	27	16	4		16	3				77	39	98.72
IFR				1							1	1	1.28
BELOW MINIMUMS													
UNKNOWN/NOT REPORTED													
RECORDS	11	27	16	5		16	3				78		
ACCIDENTS	8	21	15	5		13	3					40	
PERCENTS	14.1	34.6	20.5	6.4	.0	20.5	3.8	.0	.0	.0			

ANALYTIC TABLE

PILOT CERTIFICATE BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
STUDENT	5		2	4	11	8	14.10
PRIVATE	10			17	27	21	34.62
COMMERCIAL	5	1	1	9	16	15	20.51
ATRLINE TRANSPORT	1	1	1	2	5	5	6.41
PRIVATE W/FLIGHT INSTRUCTOR							
COML WITH FLT INSTRUCTOR	7	2	1	6	16	13	20.51
ATR W/FLIGHT INSTRUCTOR	1			2	3	3	3.85
OTHER							
NONE							
UNKNOWN/NOT REPORTED							
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

MONTH OF OCCURRENCE BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
01	3			6	9	5	11.54
02	6	2	1		9	5	11.54
03		2		4	6	3	7.69
04	4			2	6	3	7.69
05				2	2	1	2.56
06				6	6	3	7.69
07	4			8	12	6	15.38
08	4		2		6	3	7.69
09	4			2	6	3	7.69
10	4			4	8	4	10.26
11			2	6	8	4	10.26
12							
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

MONTH OF OCCURRENCE BY AIRCRAFT DAMAGE
COLLISIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
01	4	5			9	5	11.54
02	6	2	1		9	5	11.54
03	1	4	1		6	3	7.69
04	2	4			6	3	7.69
05	1	1			2	1	2.56
06	1	4	1		6	3	7.69
07	2	8	2		12	6	15.38
08	2	2	2		6	3	7.69
09	2	4			6	3	7.69
10	2	6			8	4	10.26
11		6	1	1	8	4	10.26
12							
RECORDS	33	46	8	1	78		
ACCIDENTS	20	31	8	1		40	
PERCENTS	29.5	59.0	10.3	1.3			

BEST DOCUMENT AVAILABLE

ANALYTIC TABLE

STATE OF OCCURRENCE BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
ARKANSAS	2				2	1	2.56
CALIFORNIA	2			8	10	5	12.82
CONNECTICUT				6	6	3	7.69
FLORIDA	5			6	11	6	14.10
ILLINOIS				2	2	1	2.56
INDIANA	2				2	1	2.56
IOWA				2	2	1	2.56
KANSAS		4			4	2	5.13
MASSACHUSETTS	2				2	1	2.56
MICHIGAN	4			2	6	3	7.69
MINNESOTA							
MISSISSIPPI	2				2	1	2.56
NEW JERSEY			2	2	4	2	5.13
NEW MEXICO	2			2	4	2	5.13
NEW YORK				2	2	1	2.56
OHIO	2		2		4	2	5.13
OKLAHOMA	2				2	1	2.56
TENNESSEE			1	2	3	2	3.85
UTAH	2				2	1	2.56
WASHINGTON				2	2	1	2.56
WEST VIRGINIA				2	2	1	2.56
WISCONSIN	2			2	4	2	5.13
UNKNOWN/NOT REPORTED							
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

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ANALYTIC TABLE

STATE OF OCCURRENCE BY AIRCRAFT DAMAGE
COLLISIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
ARKANSAS	2				2	1	2.56
CALIFORNIA	1	8		1	10	5	12.82
CONNECTICUT		5	1		6	3	7.69
FLORIDA	3	7	1		11	6	14.10
ILLINOIS	1	1			2	1	2.56
INDIANA	1	1			2	1	2.56
IOWA		2			2	1	2.56
KANSAS	2	1	1		4	2	5.13
MASSACHUSETTS	2				2	1	2.56
MICHIGAN	2	3	1		6	3	7.69
MINNESOTA							
MISSISSIPPI	2				2	1	2.56
NEW JERSEY	1	3			4	2	5.13
NEW MEXICO		2	2		4	2	5.13
NEW YORK		1	1		2	1	2.56
OHIO	1	3			4	2	5.13
OKLAHOMA	1	1			2	1	2.56
TENNESSEE	1	2			3	2	3.85
UTAH	1		1		2	1	2.56
WASHINGTON		2			2	1	2.56
WEST VIRGINIA		2			2	1	2.56
WISCONSIN	2	2			4	2	5.13
UNKNOWN/NOT REPORTED							
RECORDS	23	46	8	1	78		
ACCIDENTS	20	31	8	1		40	
PERCENTS	29.5	59.0	10.3	1.3			

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ANALYTIC TABLE

TYPE OF AIRCRAFT BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
FIXED-WING	28	4	5	40	77	39	98.72
HELICOPTER	1				1	1	1.28
GLIDER							
BALLOON							
BLIMP							
DIRIGIBLE							
ROCKET							
CONVERTIPLANE							
GYROPLANE							
OTHER							
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

ANALYTIC TABLE

TYPE AIRCRAFT BY AIRCRAFT DAMAGE
COLLISIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
FIXED-WING	22	46	8	1	77	39	98.72
HELICOPTER	1				1	1	1.28
GLIDER							
BALLOON							
BLIMP							
DIRIGIBLE							
ROCKET							
CONVERTIPLANE							
GYROPLANE							
OTHER							
RECORDS	23	46	8	1	78		
ACCIDENTS	20	31	8	1		40	
PERCENTS	29.5	59.0	10.3	1.3			

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ANALYTIC TABLE

TYPE OF POWER BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
RECIPROCATING ENGINE	29	4	4	40	77	39	98.72
TURBOJET ENGINE							
TURBOPROP ENGINE			1		1	1	1.28
TURBOFAN ENGINE							
NONE							
TURBOSHAFT							
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

ANALYTIC TABLE

TYPE POWER BY AIRCRAFT DAMAGE
COLLISIONS

	DESTROYED	SUBSTANTIAL	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
RECIPROCATING ENGINE	22	46	8	1	77	39	98.72
TURBOJET ENGINE							
TURBOPROP ENGINE	1				1	1	1.28
TURBOFAN ENGINE							
NONE							
TURBOSHAFT							
RECORDS	23	46	8	1	78		
ACCIDENTS	20	31	8	1		40	
PERCENTS	29.6	59.0	10.3	1.3			

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ANALYTIC TABLE

TYPE OF FLIGHT PLAN BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
NONE	27	3	4	30	64	37	82.05
VFR		1		5	6	5	7.69
IFR	1		1	4	6	5	7.69
CONTROLLED VFR							
IFR (VFR CONDITIONS ON TOP)	1				1	1	1.28
TOWER EN ROUTE CONTROL SERVICE							
OVFR				1	1	1	1.28
VFR FLIGHT FOLLOWING SERVICE							
SPECIAL VFR							
OTHER							
UNKNOWN/NOT REPORTED							
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

ANALYTIC TABLE

TYPE OF WEATHER CONDITIONS BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
VFR	29	4	4	40	77	39	98.72
IFR			1		1	1	1.28
BELOW MINIMUMS							
UNKNOWN/NOT REPORTED							
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

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ANALYTIC TABLE

AIRPORT PROXIMITY BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
ON AIRPORT	9		5	30	44	23	56.41
ON SEAPLANE BASE							
ON HELIPORT							
ON BARGE/SHIP/PLATFORM							
IN TRAFFIC PATTERN	4				4	2	5.13
WITHIN 1/4 MILE					3	2	3.85
WITHIN 1/2 MILE	1				1	1	1.28
WITHIN 3/4 MILE	1				2	1	2.56
WITHIN 1 MILE				2	3	2	3.85
WITHIN 2 MILES	1	2			1	1	1.28
WITHIN 3 MILES	1				2	1	2.56
WITHIN 4 MILES	2				4	2	5.13
WITHIN 5 MILES	2			2	12	6	15.38
BEYOND 5 MILES	6	2		4	2	1	2.56
UNKNOWN/NOT REPORTED				2			
RECORDS	29	4	5	40	78		
ACCIDENTS	15	2	3	20		40	
PERCENTS	37.2	5.1	6.4	51.3			

ANALYTIC TABLE

CONTROLLED/UNCONTROLLED AIRPORT BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
CONTROLLED AIRPORT	4		1	16	22	12	42.31
UNCONTROLLED AIRPORT	14	2	4	10	30	15	57.69
RECORDS	19	2	5	26	52		
ACCIDENTS	10	1	3	13		27	
PERCENTS	36.5	3.8	9.6	50.0			

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ANALYTIC TABLE

CONDITIONS OF LIGHT BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE			RECORDS	ACCIDENTS	PERCENT
DAWN									
DAYLIGHT	29	4	4	34			71	34	91.03
DUSK				4			4	2	5.13
NIGHT (DARK)			1	2			3	2	3.85
NIGHT (MOONLIGHT-BRIGHT)									
UNKNOWN/NOT REPORTED									
RECORDS	29	4	5	40			78		
ACCIDENTS	15	2	3	20				40	
PERCENTS	37.2	5.1	6.4	51.3	.0	.0			

ANALYTIC TABLE

FIRE AFTER IMPACT BY INJURY INDEX
COLLISIONS

	FATAL	SERIOUS	MINOR	NONE	RECORDS	ACCIDENTS	PERCENT
YES	3	1	1	1	6	6	100.00
UNKNOWN/NOT REPORTED							
RECORDS	3	1	1	1	6		
ACCIDENTS	3	1	1	1		6	
PERCENTS	50.0	16.7	16.7	16.7			

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YEARLY ACCIDENT RECORD

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ACCIDENTS, FATALITIES, RATES
U. S. GENERAL AVIATION

1970 - 1979

Year	Accidents Total	Accidents Fatal	Fatalities	Aircraft-Hours Flown (000) c/	Aircraft-Miles Flown (000) c/	Accident Rates Per 100,000 Aircraft-Hours Flown Total	Accident Rates Per 100,000 Aircraft-Hours Flown Fatal	Accident Rates Per Million Aircraft-Miles Flown Total	Accident Rates Per Million Aircraft-Miles Flown Fatal
1970	4,712 a/	641 a/	1,310	26,030	3,207,127 d/	18.10	2.46	1.47	0.200
1971	4,648	661	1,355	25,512	3,143,181	18.22	2.59	1.48	0.211
1972	4,256 a/	695 a/	1,426 b/	26,974	3,317,100	15.77	2.57	1.28	0.209
1973	4,255 a/	723 a/	1,412	29,974 r/	3,686,802 e/	14.19	2.41	1.15	0.196
1974	4,425 a/	729 a/	1,438	31,413 r/	3,863,799 e/	14.08	2.31	1.14	0.188
1975	4,237 a/	675 a/	1,345	32,024 r/	3,938,952 e/	13.22	2.10	1.08	0.171
1976	4,193 a/	695 a/	1,320	33,922 r/	4,172,406 e/	12.35	2.04	1.00	0.166
1977	4,286 a/	702 a/	1,436	35,792 r/	4,402,126 e/	11.97	1.96	0.97	0.159
1978	4,494 a/	793 a/	1,770 b/	39,400	4,964,400 e/	11.40	2.01	0.90	0.159
1979	4,023	678	1,397	43,340	5,590,883	9.28	1.56	0.72	0.121

a/ Suicide/sabotage accidents included in all computations except rates (1970-1, 1972-3, 1973-2, 1974-2, 1975-2, 1976-4, 1977-1, 1978-2, 1979-0).
b/ Includes air carrier fatalities (1972-5, 1978-142) when in collision with general aviation aircraft.
c/ Source: FAA
d/ Beginning in 1970, the decrease in aircraft-miles flown is the result of a change in the standard for estimating miles flown.
e/ Estimated by NTSB.
r/ Revised by FAA.

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EXPLANATORY NOTES

EXPLANATORY NOTES

GENERAL AVIATION

General Aviation refers to the operation of U.S. Civil Aircraft owned and operated by persons, corporations, etc., other than those engaged in U.S. air carrier operations. (U.S. air carrier operations include the certificated route air carriers, supplemental air carriers, and commercial operators of large aircraft).

AIRCRAFT ACCIDENT

The accidents included herein are the occurrences incident to flight in which, "as a result of the operation of an aircraft, any person (occupant or nonoccupant) receives fatal or serious injury or any aircraft receives substantial damage." The definition of substantial damage is:

(1) Except as provided in subparagraph (2) of this paragraph, substantial damage means damage or structural failure which adversely affects the structural strength, performance, or flight characteristics of the aircraft, and which would normally require major repair or replacement of the affected component.

(2) Engine failure, damage limited to an engine, bent fairings or cowling, dented skin, small punctured holes in the skin or fabric, ground damage to rotor or propeller blades, damage to landing gear, wheels, tires, flaps engine accessories, brakes, or wingtips are not considered "substantial damage" for this part.

INJURY INDEX

Injury index refers to the highest degree of personal injury sustained as a result of the accident.

FATAL INJURY

Any injury which results in death within 7 days of the accident.

SERIOUS INJURY

Any injury which 1) requires hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received; 2) results in a fracture of any bone (except simple fractures of fingers, toes, or nose); 3) involves lacerations which cause severe hemorrhages, nerve, muscle, or tendon damage; 4) involves injury to any internal organ; or 5) involves second- or third-degree burns, or any burns affecting more than 5 percent of body surface.

EXPLANATORY NOTES

TYPE OF ACCIDENT

Type of accident relates to the immediate circumstances of the occurrence. Many accidents involve a series of circumstances and therefore require a second type to more fully describe the sequence of events. The fold out page shows the relationship of first and second accidents types. Some examples of types of accidents are as follows:

Gear Collapsed
: Collapse of the landing gear due to mechanical failure other than a malfunction of the retracting mechanism.

Gear Retracted
: Retraction of the landing gear due to malfunction or failure of the retracting mechanism or to inadvertent retraction by the crew. Excludes intentional gear retraction and wheels-up landing.

Airframe Failure
: Occurrences resulting from failure of any part of the airframe while in flight or in motion on the ground. Excludes failure resulting from contact with another airplane or object, or impact with the ground, or damage from landing gear collapse or retraction.

Engine Failure/Malfunction
: Occurrences of engine failure or malfunction for any reason. Includes engine stoppage, power interruption or power loss.

PHASE OF OPERATION

The phase of operation relates to the particular segment of the flight or operation during which the circumstances of the accident occur.

KIND OF FLYING

Refers to the purpose for which the aircraft is being operated at the time of the accident. There are four broad categories of kind of flying.

1. Instructional Flying
   Refers to flying accomplished in supervised training under the direction of an accredited instructor.

EXPLANATORY NOTES

KIND OF FLYING

2. Noncommerical Flying
Refers to the use of an aircraft for purposes of pleasure, personal transportation or in connection with a private business, in corporate/executive operations, and in other operations, wherein there is no direct monetary fee charged. It includes the following categories.

Pleasure
Flying by individuals in their own or rented aircraft for pleasure, or personal transportation not in furtherance of their occupation or company business.

Business
The use of aircraft by pilots (not receiving direct salary or compensation for piloting) in connection with their occupation or in the furtherance of a private business.

Corporate/Executive Operations
The use of aircraft owned or leased, and operated by a corporation or business firm for the transportation of personnel or cargo in furtherance of the corporation's or firm's business, and which are flown by professional pilots receiving a direct salary or compensation for piloting.

3. Commercial Flying
Commercial flying includes all general aviation flying normally conducted for direct financial return, except instructional flying. It includes air taxi operations, aerial application, fire control, aerial mapping or photography, aerial advertising, power/pipeline patrol and fish spotting.

4. Miscellaneous Flying
Includes other kinds of flying not covered under the other three broad categories. In some instances, the criterion of direct financial return may or may not be present.

COLLISION BETWEEN AIRCRAFT

Collisions between aircraft are so classified only when both aircraft are occupied. This includes collisions wherein both aircraft are airborne (midair); one is airborne, the other on the ground; and both are on the ground. A collision with a parked, unoccupied aircraft is classified under the broad category of collision with objects (parked, unoccupied aircraft). A collision between aircraft is treated as one accident in the overall total. However, each aircraft involved in a collisions is analyzed completely

COLLISION BETWEEN BETWEEN AIRCRAFT

and coded, thus two aircraft accident records are produced -- one for each aircraft. These records contain the same broad categories of coded data; however, the specific entries, such as type of aircraft, kind of flying, and phase of operation, may not be common to each aircraft. As a result, the number of accidents may differ in the various tables depending on whether collisions are involved. If collisions are involved, the number of accidents would depend on whether the selected data are common to each aircraft. For example, in a table which shows the number of accidents in the various kinds of flying, if each of the colliding aircraft was conducting pleasure flying, one accident would appear in the pleasure flying column. However, if one aircraft was engaged in pleasure flying and the other was conducting dual instruction, the accident would appear twice -- in the pleasure flying column and in the dual instruction column.

CAUSES AND RELATED FACTORS

In determining probable cause(s) of an accident, all facts, conditions, and circumstances are considered. The objective is to ascertain those cause-effect relationships in the accident sequence about which something can be done to prevent recurrence of the type of accident under consideration. For statistical purposes where two or more causes exist in an accident, each is recorded and no attempt is made to establish a primary cause. Therefore, in the cause/related factor tables, the figures shown in the columns dealing with cause may exceed the total number of accidents. The term "factor" is used, in general, to denote those elements of an accident which further explain or supplement the probable cause(s). This provision was incorporated in the coding system to increase flexibility and to provide a means for collecting essential items of information which could not be readily categorized elsewhere in the system.

The number of total accidents and fatal accidents shown in the cause/factor tables may not agree with the number of total accidents or fatal accidents in other tables covering the same basic aircraft category or operational segment of General Aviation. This is because accidents that occurred on foreign soil were investigated and analyzed for cause by the government of the country involved, and in many cases the final report has been received. All accidents awaiting final causal determination were excluded from the cause/factor tables.

AIRCRAFT WEIGHT CATEGORIES

The International Civil Aviation Organization's categories of aircraft weight are utilized to classify accident data as follows:

0 -	2,250 kilograms	(0 -	4,960 pounds)
2,251 -	5,700 kilograms	(4,961 -	12,565 pounds)
5,701 -	27,000 kilograms	(12,566 -	59,525 pounds)
27,001 -	272,000 kilograms	(59,526 -	599,650 pounds)
272,001 -	kilograms and greater	(599,651	pounds and greater)

EXPLANATORY NOTES

SMALL FIXED-WING AIRCRAFT

Fixed-wing aircraft which have a maximum gross takeoff weight of 5700 kilograms (12,565 pounds), or less.

LARGE FIXED-WING AIRCRAFT

Fixed-Wing aircraft which have a maximum takeoff weight greater than 5,700 kilograms (12,565 pounds).

ROTORCRAFT

Aircraft which in all usual flight attitudes are supported in the air wholly or in part by a rotor or rotors; i.e., by airfoils rotating or revolving about an axis.

TYPES OF WEATHER CONDITIONS

The types of weather conditions (VFR/IFR) are determined in accordance with the prescribed minima in Part 91 of the Federal Aviation Regulations. These minima pertain to the ceiling and visibility, in conjunction with the type of airspace, at the accident site. Type of weather conditions are based on surface weather as determined from officially recognized sources. Weather conditions encountered in flight are not necessarily representative of the classifications VFR/IFR as carried under Type of Weather Conditions.

ABBREVIATIONS

AIRCRAFT

SFW - Small Fixed-Wing
LFW - Large Fixed-Wing
ROTOR - Rotorcraft

ENGINES

SE - Single Engine
ME - Multiengine

AIRCRAFT DAMAGE

DEST - Destroyed
SUBST - Substantial

WEATHER CONDITIONS AND/OR TYPE OF FLIGHT PLAN

VFR - Visual Flight Rules
IFR - Instrument Flight Rules
DVFR - Defense Visual Flight Rules

EXPLANATORY NOTES

ABBREVIATIONS

MISCELLANEOUS

EST - Estimated
FAA - Federal Aviation Administration
FAR - Federal Aviation Regulations
NA - Not Available
PASSG - Passenger
UNK - Unknown

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